DRINKING WATER FAUCETS
for
Refrigerators—Water Coolers
New model now available for use on city water pressure

CORDLEY & HAYES
147 Hudson Street New York City

Wirfs PATENTED
AIRTITE" GASKET
FOR REFRIGERATOR DOORS
IS MADE IN FIVE STANDARD SIZES

For the manufacturer requiring a special type, we offer the services and experience of an organization devoted exclusively to door gasket manufacturing

Let us work from your blueprints

DEALERS in electric refrigeration have many occasions to use "AIRTITE" Gasket. Write for samples and prices.

WIRFS CORPORATION
135 S. 17th St. St. Louis, Mo.

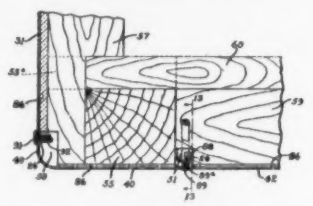
LATEST PATENTS IN REFRIGERATION FIELD

(Continued from Page 7, Column 5)

Henry P. Braeutigam and William G. Holbrook, Dayton, Ohio, assignors to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Feb. 29, 1928. Serial No. 257,989. 21 Claims. (Cl. 220—9.)

1. An insulated refrigerator cabinet having a frame, a flat metal side panel secured to said frame and having flanges along its upright edges, one of said flanges being unexposed to the exterior of the cabinet, said side panel forming one corner only of said cabinet, and a metal front panel secured to said frame and having flanges along its upright edges, one of said last named flanges being unexposed to the exterior of the cabinet.

19. An insulated refrigerator cabinet having sheet metal panels supported inde-



1,832,089

pendent of each other, the panels having substantially straight parrellel and adjacent inwardly projecting edge portions, and a compressible space compressed between said edge portions.

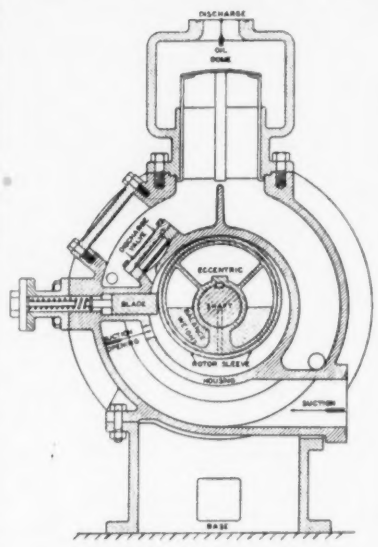
(To Be Concluded in Next Issue)

REFRIGERATION RUBBER WARE

Door and Frame Insulating Strips. Gliders for Refrigerator Legs. Top Hole Sections, Lid Collars, Sleeves, Brine Hole stoppers for Ice Cream Cabinets, etc. Specializing in Parts Made to Customer's Design.

THE AETNA RUBBER CO.
ASHTABULA, OHIO

New Vilter Rotary



Cross-section of rotary compressor designed by Vilter Mfg. Co.

* * *

NEW ROTARY COMPRESSOR USED FOR BOOSTER WORK

(Concluded from Page 1, Column 3)

point of register came into contact with each revolution, a washboard effect would develop on the faces, and efficiency be lost.

One end of the rotor sleeve is flanged and the other end squared. These end faces bear against plates which are held firmly against the end faces with springs. When the rotor sleeve follows its eccentric pathway and shifts a trifle at each revolution, the designers show, the end faces impart a lapping motion to the plates pressing against the end faces. This lapping motion develops very flat surfaces, the Vilter men claim, effecting a gas-tight joint.

It has been found desirable to incorporate an oil cooler into the oil circulating system to provide proper lubrication to the compressor. Water is the cooling medium for the oil.

V-belt drives are used to operate the compressor, although a direct connection between the rotary compressor is practical except for the fact that then capacities of the machine cannot be so easily varied by changing motor pulleys.

Survey of Motors For Household Refrigeration

A SURVEY recently made by ELECTRIC REFRIGERATION NEWS among manufacturers of household electric refrigeration systems to determine what makes of alternating current motors are being used as standard equipment in 1931 models revealed the information reproduced below.

Some of the manufacturers furnished the electrical type of motor they use; of these 23 employ the repulsion induction type, while 13 have adopted the capacitor motor as standard.

Where more than one make of motor is used, all are indicated.

Automatic Refrigerator	Wagner
Belding-Hall	Delco
Brenner, Alphonse	Wagner
Canton Refrigerators	Own make
Central Machine	Wagner
Copeland	Delco
Dayton Refrigeration	Leland
Frigidaire	Delco
Frig-O-Matic	Wagner, Delco
General Electric	General Electric
Gibson	Delco
Gurney	Century
Heinz & Munschauer	Delco
Holbrook	Wagner
Kohlenberger Eng'r'g	Westinghouse, Wagner
Keokuk	Century, General Electric
Iceaire	Century
Iceberg	Century, General Electric, Wagner, Westinghouse
Illinois Moulding	Delco
International Oil Htg.	Wagner, Century
Maine Mfg.	General Electric
Merchant & Evans	Wagner
Mitycold	Westinghouse
Modern Refrigeration	Wagner
O'Keefe & Merritt	Century, General Electric, Wagner
Rice Electric	General Electric
Rose & Co., J.	General Electric
Sanitary Refrigerator	Delco
Servel	Wagner
Starr Co.	Century, Delco Leland
Studner Brothers	Leland
Super Oil Heater	General Electric
Tennessee Furniture	Wagner
Trupar	Master
Uniflow	Delco
Universal Cooler	General Electric
Warner Steel Products	Century
Westinghouse	Westinghouse
Williams Oil-O-Matic	Baldor, Leland, Wagner
Zerozone	General Electric

33 APARTMENT SERVELS

PROVIDENCE, R. I.—The Refrigerator Sales & Engineering Co., Inc., installed 33 Servel apartment house units in the Tudor Arms, here.

NEW COMPANY STARTED

STAMFORD, Conn.—Chilair Electric Refrigeration Co. has been established at 110 Courtland Hill, Glenbrook section, by Alexander MacKenzie. The company will conduct a service business.

APEX Automatic Refrigeration Specialties

Expansion Valves, Pressure Control Water Regulators, Gas Pressure Regulators, and Water Pressure Regulators.

APEX REGULATOR COMPANY
DIVISION OF
FISHER GOVERNOR COMPANY
MARSHALLTOWN, IOWA

GLASS FILLERS
FOR WATER COOLERS

Send for booklet on complete line of self-closing faucets, bubblers, glass fillers, and other accessories.

Vertical Type

CENTRAL BRASS MFG. CO.
2950 East 55th St.
CLEVELAND OHIO

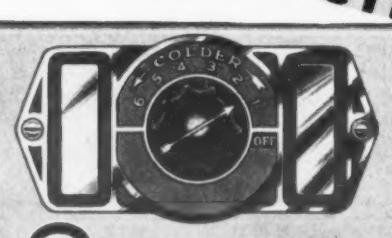
precision built

PROFITS

. . . depend on little things, like the cost of shafts. The full story of Modern crank, transmission, motor and eccentric shafts is given in the Booklet "SHAFTS," sent on request to executives.

MODERN MACHINE WORKS, INC.
156-160 Milwaukee St., Dept. D., Milwaukee, Wisconsin

ANNOUNCING



2 NEW Simplified Mountings of the PENN Type J Unit Control

The Penn Type J Unit Control for Domestic Electric Refrigerators, the control which has been thoroughly tried and proven, is now available in two new, attractive and greatly simplified mountings—the horizontal and the vertical, with a specially designed, beautiful chromium outside dial plate. It is arranged so the switch itself may be mounted on the back of any convenient panel, inside or outside the cabinet, by inserting through an opening, using the pleasing dial plate on the outside to cover the panel opening and dress up the refrigerator. If you wish, your own dial plate may be applied. You will be amazed to see how easy it is to apply Penn Type J with these two new mountings and also how it beautifies and simplifies your refrigerator.

Type J provides complete One Dial Control of your refrigerator, with temperature selector (licensed exclusively under Frigidaire "Cold Control" patents), Thermal Overload Protection, Start and Stop for Defrosting, plus Range and Differential Adjuster.

If you've believed that all unit controls are alike except in price, we urge you to send at once for a complete description of the Penn Type J and these two new mountings. To reliable manufacturers we will gladly send a standard control for test purposes. Write at once, giving complete details that we may provide the proper control that fits in with your own particular refrigerator. No obligations, but a real revelation.

PENN ELECTRIC SWITCH CO.
DES MOINES, IOWA

Accurate, dependable, low-cost refrigeration control

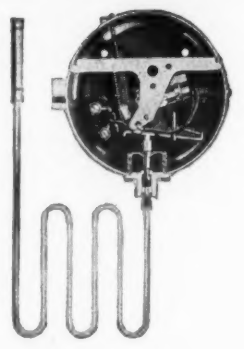
MERCOID NO. 858

The No. 858 Model LL-1 is especially designed for milk coolers, frozen food cases, soda fountains, ice cream cabinets and general commercial work. Easily adjusted for any cut-in or cut-out point. It is low in price.

This Mercoid is one of a complete line of controls to operate by temperature or pressure. Instruments are also available of the Dual Type, combining control of low side pressure (or by temperature) and high pressure cut-out. There is a Mercoid for every refrigeration need.

Mercoids carry full line current—110 or 220 volts—without corrosion of contacts. No relays or transformers.

A postcard will bring you details of these instruments, together with description of the No. 682 Arco Solenoid Valve for water-cooled units.

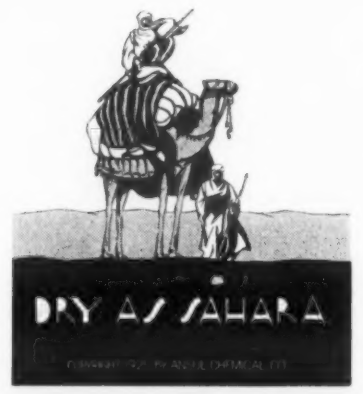


MERCOID CONTROL
No. 858
MODEL LL-1

Furnished in ranges minus 10° to plus 25° and plus 10° to plus 50° with a differential as close as 2½° or as wide as 12°. Changing the cut-in point at high does not change the cut-out point at low

DETROIT LUBRICATOR COMPANY
DETROIT, U. S. A.
5842 Trumbull Avenue
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

ANSUL
Sulphur Dioxide



ANHYDROUS SULPHUR DIOXIDE
ANALYZED

ANSUL CHEMICAL COMPANY
MARINETTE • WISCONSIN

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office.

The business newspaper of the refrigeration industry

ISSUED EVERY WEEK
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TEN CENTS PER COPY
TWO DOLLARS PER YEAR

BLACK MAINTAINS PLACE IN MARCH TO MANSFIELD, O.

Massachusetts Salesman Holds Second Place In Contest

MANSFIELD, Ohio—With Allen Black, salesman for Allen-Ingraham, New York, piling up mileage of more than twice that of the nearest competitor in his district in the Westinghouse "On-to-Mansfield" campaign, the center of competition shifted to the race between divisions and districts as the contest neared its close.

C. B. Harding, retail salesman for the Electric Device Co., Springfield, Mass., leading district 2, is second to Mr. Black in piled up mileage, with 9,985 miles travelled to Mr. Black's 16,599. Mr. Harding replaces L. J. Selya, Buckley & Scott, Boston, from the leadership in his district. Mr. Black's mileage helps to keep the New York district in the lead.

High men in the rest of the districts according to latest compilations are: R. M. Fisher, Thomas H. Bradley Co., Buffalo district, 3,090; S. Smart, who replaces C. H. Durrer for the leadership of the Washington district, with 5,681 miles; T. L. Sperry, representing the Bigby Electric Co., Tampa, Fla., leading district 5 with 2,480.

H. L. Buehler of the Danforth Refrigerator Co., Lakewood, Ohio, leads dis-

(*Concluded on Page 4, Column 3*)

WILLIAMS OIL-O-MATIC NET PROFIT $15,651

BLOOMINGTON, Ill.—A net profit for the fiscal year ending Oct. 31, of $15,651.47 as opposed to a loss for the previous fiscal year of $321,178.55, is reported by the Williams Oil-O-Matic Heating Corp.

"This clean-cut advance of $336,740.02 in recovery represents an achievement that might well be termed modern painless business surgery," said C. U. Williams, president of the corporation. "The surgery has consisted in the removal of every source of inefficiency in factory, office and selling organizations."

HULETT NAMED PROMOTION MANAGER BY ELECTROCHEF

DETROIT, Mich.—Electromaster, Inc., manufacturer of the Electrochef range, announces the appointment of Gerald Hulett as sales promotion manager.

Mr. Hulett is former president of F. J. Simmons & Co., a Detroit firm of grain brokers. Five years ago he resigned to form the Gerald Hulett Co., handling food stuffs. In the latter connection he made a thorough study of household economics.

Mr. Hulett joined forces with Electromaster in 1930 and has served in almost every department of the business. For six months he travelled as special New England sales representative.

TURKEYS GO AS PRIZES IN DEALER'S CAMPAIGN

BALTIMORE, Md.—Turkey was included on most of the menus of Parks & Hull salesmen Thanksgiving as a result of a turkey sales contest. Parks & Hull Co. is the Westinghouse dealer here.

Salesmen were offered a 10-lb. turkey for sales of $600, 12½-lb. turkey for $700, 15-lb. bird for $800, etc. The contest started Nov. 7 and ended Nov. 25. By the fourth day after the contest opened three salesmen had enough sales to win a 10-lb. turkey.

GUATEMALA DISTRIBUTOR OF MAJESTICS AT FACTORY

CHICAGO—J. G. Alvarenga, distributor of Majestic refrigerators and radios in Guatemala City, Guatemala, is spending several weeks at the factory in Chicago conferring with officials.

Mr. Alvarenda is getting ideas for sales programs and information on developing his service branch.

George M. Farrin Named Gibson Manager

GREENVILLE, Mich. — George M. Farrin of Chicago has been appointed middle eastern district manager for the Gibson Refrigerator Co., according to an announcement made by officials of the company.

Mr. Farrin was formerly associated with the Lyon & Healy distributing organization in Chicago, contacting dealers in that territory.

The new middle eastern district manager, who will make his headquarters in Chicago, has already appointed the following distributors in his territory: Otis-Hidden Co., Louisville, Ky.; P. H. Davies & Sons, Grand Rapids, Mich.; Electrical Specialties Co., Detroit, Mich.; and the Dufenhorst Sales Co., Milwaukee, Wis.

UHALT MANAGES NEW G. E. DEALERS DIVISION

CLEVELAND—A. A. Uhalt, since 1930 director of dealer operations in the merchandising division of the General Electric refrigeration department, will become manager of the newly created dealer division on Jan. 1, it has been announced by P. B. Zimmerman, manager of the department.

Mr. Uhalt's department now becomes a separate entity. His assistant is Fielding Chandler, who until a short time ago was in charge of the accessory department of the product division.

Mr. Uhalt came to General Electric in 1920, as an engineer with the International General Electric Co. in the South American division. In this capacity he supervised the construction of central stations the length of the east coast of South America.

Returning to the United States in 1927, he became associated with the Mississippi Power & Light Co. sales department. Fourteen months later he obtained a General Electric refrigerator dealer's franchise and established a business in Monroe, La.

In 1928, he became a junior executive at refrigeration headquarters, specializing in campaign plans. At first he paid particular attention to sales by utility corporations, later extending his field to dealer activities in general.

Mr. Chandler has been with the refrigeration department of General Electric for four years, first with the distribution division, then as manager of the refrigeration accessory department.

Beginning January 1, Mr. Uhalt and his assistant will devote considerable time to the development of a new dealer structure and an entirely new plan of operation.

HOOVER REPORT COVERS FIELD OF REFRIGERATION

Bright, Churchill On Home Conference Subcommittee

WASHINGTON, D. C.—Marking the "first official recognition of household refrigerators in the conservation of food in the American home," the report of the subcommittee on refrigeration to President Hoover's Conference on Home Building and Home Ownership has just been released.

The 43-page report covers temperatures for house refrigeration, space required, present practice as to food storage in the home, cooling devices used as a substitute for refrigeration, standards for home refrigerators, selecting a mechanical refrigerator, choice of refrigerant, location of refrigerator.

Members of the subcommittee which prepared the report are: George B. Bright, refrigeration engineer; Dr. J. B. Churchill, consulting engineer; Dr. Mary Pennington, consultant on refrigeration; Mrs. Paul Howe, of the American Home Economics Association; and Dr. Louise Stanley, chief, Bureau of Home Economics, U. S. Dept. of Agriculture, chairman.

How to provide for the purchase of homes by persons whose individual resources are only 20 or 25 per cent of the cost of each home is said to be one of the chief financial problems of the Home Building conference.

In finding a solution for these and other problems connected with home building and home ownership, the con-

(*Concluded on Page 4, Column 4*)

New Sales Argument For Dry Prospect

ROCKVILLE CENTER, N. Y.—J. M. Varney was the candidate of the National Prohibition Party for President in 1928. He was defeated, but he still feels strongly on the dry question.

Recently he purchased a Westinghouse WL-73. James E. Malone of Sunrise Utilities Co., Inc., sold it to him.

Mr. Malone's chief sales point proved to be that grape juice would not ferment in a Westinghouse refrigerator.

Hulburd Appointed To Kelvinator Staff

DETROIT—Fred G. Hulburd, former promotion manager for the Silent Automatic oil burner, has been appointed to the sales promotion department of the Kelvinator Corp., according to an announcement made by Vance C. Woodcox, sales promotion manager.

Mr. Hulburd's appointment fills the vacancy left by the transfer of J. S. Dohany to the sales department as assistant to regional managers J. C. Burton and J. S. Crossin.

The new member of the Kelvinator sales promotion department is a native of Fort Wayne, Ind. He was educated at Valparaiso university. Besides being employed by the Silent Automatic Corp., he was once with the Tokheim Oil Tank and Co., Fort, Wayne.

HUGHES ANNOUNCES RANGE DRIVE IN 1932

CHICAGO—An advertising and sales promotion program to gain public acceptance for electric cookery will be launched by General Electric Hotpoint in January, 1932, according to George A. Hughes, president of Edison General Electric Appliance Co., Inc.

In size of advertising budget, scope of operations, and distribution set-up, this program will follow closely the plan of development which for the past four years, has aided the sales of electric refrigerators.

In practically every section of the country, present range sales organizations will be taken over as rapidly as possible by authorized General Electric Range distributors, who will attempt to develop an increasingly large additional range market. Greater advertising and sales cooperation will be extended to all retail outlets and utilities in the territories which will come under the various distributor's organizations.

To all this activity will be added the force of the national magazine, radio and general publicity campaign, and the local advertising done by distributors, utilities and other retailers.

"Aggressive sales promotion and maximum selling activity," declares Mr. Hughes, "are far more essential to the growth of the range business than lower energy rates or lower range prices.

"This, of course, means two things: First, it means a re-alignment of the distribution set-up to provide for distributors and retail outlets in greatly increased numbers. Second, it means the sort of aggressive advertising and selling program which put across the electric refrigerator, and which is now being launched to put across the electric range."

JOURNALISTS TO JUDGE FRIGIDAIRE CONTEST ENTRIES

Winners Will Receive $6,000 in Prizes For 9 Words

DAYTON—Three executives of business publications, representing the refrigeration, merchandising and advertising worlds, will be judges in the $6,000 Christmas contest now being conducted by Frigidaire Corp., announces E. G. Biechler, president and general manager.

The judges will be L. E. Moffatt, managing editor, *Electrical Merchandising*, New York; F. M. Cockrell, publisher, ELECTRIC REFRIGERATION NEWS, Detroit; and B. A. Grimes, news editor of *Printers' Ink*, New York.

They will meet in Dayton following the close of the word-forming contest to choose the 61 winners.

First prize in this nation-wide affair will be $1,000 in cash. There will be 10 second prizes of new Frigidaire electric refrigerators and 50 prizes of $50 in cash.

Every Frigidaire showroom and dealer in the country is tying in with the national contest, which involves a test of skill in forming a nine-word statement by beginning each word with a letter of the word "Christmas."

More than a half million entry blanks have been sent into the field. Contest

(*Concluded on Page 4, Column 2*)

15 BUREAUS FORMED; CENTRAL BODY MEETS

NEW YORK—Fifteen new local bureaus have been formed and added to the list of the Electric Refrigeration Bureau since Oct. 15, according to a report on the bureau's activities during November. The list now totals 321 active local refrigeration bureaus.

During November, J. G. Learned, regional director of the Great Lakes division, comprising Illinois, Indiana, Michigan and Wisconsin, called a meeting of the directors of those four states to meet Dr. G. W. Allison of the bureau

(*Concluded on Page 4, Column 1*)

FULLER & SMITH & ROSS IS WESTINGHOUSE AGENCY

EAST PITTSBURGH, Pa.—Fuller & Smith & Ross, Inc., national advertising agency with headquarters in Cleveland, New York, and San Francisco, has been chosen to handle all advertising of the Westinghouse Electric & Mfg. Co., effective Jan. 1.

The announcement is made by Ralph Leavenworth, Westinghouse general advertising manager.

The advertising company will take care of all accounts concerning home electric appliances, radio receiving sets, and refrigerators. It will also continue as consultant on institutional and technical and trade paper advertising copy.

ADVERTISING CAMPAIGN IS CARRIED OUT BY BUREAU

ST. LOUIS—Billboards, street car cards, and newspaper advertising are the media through which the Electric Refrigeration Bureau here is conducting a city-wide and county-wide electric refrigeration Christmas sales campaign.

The advertisements in each case feature the slogan, "Your dealer has a special Christmas plan." Newspaper advertising carries the names of the dealers who are featuring electric refrigerators for Christmas.

This year's sales record for the first nine months in St. Louis and the surrounding county totals more than 20,000 units. More than 60,000 electric refrigerators are said to be in operation.

A.S.R.E. REFRIGERATION CODE INTRODUCED IN SEATTLE

SEATTLE—In line with the official code of the American Society of Engineers is a new electric refrigeration ordinance introduced here recently.

She Wins $5,000 With Essay

John Cortines, Kelvinator regional manager; Charles H. Bone, fourth prize winner, and Mrs. Edward F. Holmes, winner of the first prize of $5,000 in Kelvinator comparison contest, protographed in San Francisco.

RETAIL STORE OPENED BY WETMORE-SCOTT

BOSTON—The firm of Wetmore-Scott, distributor of Westinghouse refrigerators in this city, opened its new headquarters at 533 Commonwealth Ave. the last week in November.

The move to newer and larger quarters follows the general expansion of the firm, which has added 30 new employes to its home office and 150 new dealers during the past year.

A display room area of 4,000 sq. ft. is included in the new building. Three refrigerators of each of the Westinghouse models are kept on display at all times.

"Open house" for visitors was held during the week in which the store opened, and many prizes were given away in drawings.

The firm of Wetmore-Scott is headed by John W. Scott and V. C. Bruce Wetmore. The man who directed the show room construction and decoration is Harry S. Gould, vice president in charge of merchandising. He will also handle the advertising and sales promotional work.

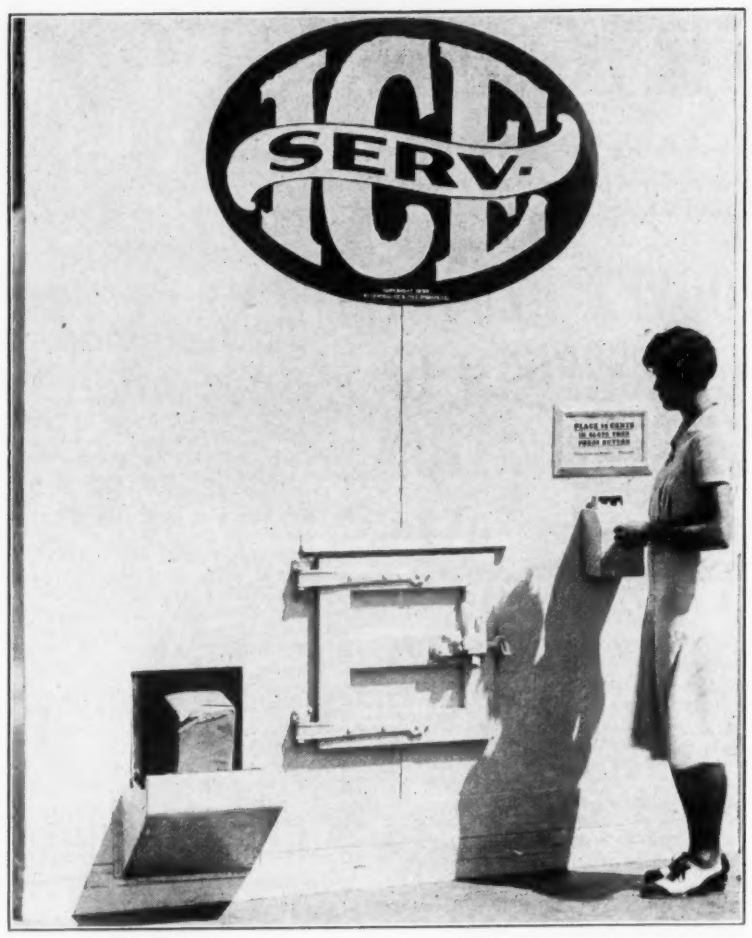
Wesley E. Downing is vice president in charge of retail distribution. He will also control the apartment house and commercial divisions in this territory.

The third executive member of the Wetmore-Scott board of directors is Russell L. Jones, vice president in charge of wholesale activities. He will also direct jobber activities and handle the central station contacts.

PENN SWITCH OPENS SALES OFFICE IN PHILADELPHIA

DES MOINES, Iowa—The Penn Electric Switch Co., here, has announced the opening of a new sales office at 2401 Chestnut St., Philadelphia, Pa. R. V. Clark will have charge of it.

Packaged Ice Vender



Methyl chloride refrigerant is used in the Globe Ice Machine Co. unit in this ice vending machine in California.

Governors, Congressmen, Mayors of Refrigerania Announced

CLEVELAND—Compilation of the results in the other divisions of Refrigerania in the General Electric political sales campaign follows the announcement of the election to the presidency of A. S. Dunning, Duluth, in the Dec. 2 issue of ELECTRIC REFRIGERATION NEWS.

Mr. Dunning and his cabinet in the republic of Refrigerania will be inaugurated at the national convention early next February in Miami, Fla. Other officials will be installed in their own states and will take office Feb. 1.

Presidential candidates in the order in which they finished were: A. S. Dunning, president-elect; A. F. Head, vice president; E. J. Nellor; C. L. McCrea, secretary of state; P. H. Harrison, secretary of the treasury; F. H. Cushman; K. A. Connelly, secretary of commerce; Charles Gould, F. W. Wolf, Frank Edwards, Rex Cole, S. C. Caswell, W. D. Alexander; Mark Wright, secretary of health.

L. W. Driscoll, R. S. Montgomery, S. C. Griswold, Clark Adams, W. B. Stringham, J. H. Burke, L. T. Milnor, A. J. Finck, R. Cooper, Jr., J. E. Neily, Gordon Smith, S. E. Stewart, E. H. Schaefer; George Belsey, secretary of education; A. G. Riddick, Judson C. Burns, H. H. Cortwright, C. D. Gentsch, D. E. Breckenridge, D. F. Hines, George Patterson, O. F. Stuefer, H. L. Parsons, R. C. McKay, M. A. Glueck, Dupont Guerry, D. H. Willis.

L. H. Bennett, E. B. Edmundson, B. K. Sweeney, G. H. Bogart, W. H. Ochiltree, George T. Bauder, L. D. James, Turner Barger, H. A. Pendergraph, E. O. Cone, Gordon Prentice, Albert Ahrens, N. K. Ovalle, W. N. Hogan, H. D. Laidley, and D. A. O'Bannon.

Harvey Wins Crown

Among district managers, Fred Harvey, New York and New England district, won first place; his leading distributor being P. H. Harrison, one of the cabinet members.

Ben Ritter was second, jumping from fifth into second place in the last week. Standings of the other district managers were: District Ferguson, (Middle West), third; District Walthall (central), fourth; District Allen (Middle and South Atlantic), fifth; District Ruck (Pacific Coast), sixth; and District Freshman (southern), seventh.

Candidates for governorships of the various states (distributorships) were sales managers of the four departments: retail, wholesale, apartment house and commercial.

Retail Party Wins

The retail party got the most governorships, wholesale was next, apartment house third, and commercial fourth in rank.

Winning governors were: H. J. Preston, Jr., E. B. Cobb, Jack Saur, F. C. Smith, G. L. Thompson, George C. Ray, Ray H. Curtiss, Harry Falkell, H. M. Cook, J. M. Breckenridge, H. C. Blinsinger, Tom Phillipson, John J. Massimi, R. E. Garrett, J. E. Vaughan, W. H. Reif, H. W. Gifford, A. S. Kosser.

G. E. Weld, G. W. Freeman, C. E. Bown, Jr., J. E. Blomquist, H. N. Gruber, H. Y. Donnelly, John Ecclestone, George A. Wortman, W. L. Rasmussen, H. K. Harding, J. H. Lathrop, A. B. Judge, Niles Fields, J. B. Noyes, Carl Shurman, Jack Spiers, Edward L. Hill, R. C. Schiefelbein, A. Muensenmaier.

S. G. Trainor, George W. Cabell, W. A. Mauser, D. A. O'Bannon, J. Houserman, R. E. Stickel, J. R. Atkinson, W. B. Wiley, C. D. Briney, H. H. Princehouse, T. J. Sullivan, J. P. Goldschmidt, D. C. Goff, C. M. Weber, P. H. Sawyer, N. E. Kleckner, J. G. Chase, E. P. Hodshire, H. H. Smith, and James F. Holt.

Leading Branch Managers

Winning lieutenant governors, who were distributors' branch managers, were: Stuart Waugh, Chan Ricker, E. A. Speer, H. C. Chestnutt, V. W. Thompson, R. E. Tierney, C. F. Davis, Russell Bishop, Clarence Locke, O. A. Jensen, Joseph F. Bader, C. G. Blackburn, Peter F. Acer.

E. L. O'Brien, E. S. Jaggars, E. C. Gates, W. R. Burns, D. R. Cannon, G. E. McLaughlin, F. V. Cunningham, J. A. Casimir, C. H. Ludwig, L. M. Tiller, Jule Goettelman, Fred Maguire, Paul Shepard, C. E. Bartlett, C. C. Howard, J. L. Mahony, George Scott, R. E. Grounds, Rex Judy, R. M. Alexander.

C. A. Dalton, C. O. Cline, G. Wacker, L. L. Stacy, C. A. Young, Howard S. Morton, Carl H. Miller, A. L. Brown, B. M. Ernst, W. M. Page, J. W. Passmore, L. L. Peters, O. E. Olson, J. A. Hines, E. Zabors, Harry Hundley, H. H. Katskee, J. C. Mickelwait, L. A. Brumbaugh, G. E. Draper, E. R. Murphy, F. R. Mannweiler.

Winning congressmen, taken from the ranks of the central station managers were: Samuel Jones, U. J. Smith, Howard Peacock, T. I. Dekle, A. V. Rose, A. Y. Preble, R. W. Fairnie, S. Menzies, Tom Tilley, P. P. Baldwin, Thomas S. Dignan, C. F. Heyser, W. M. Peck, Ray Fisher, R. K. Thompson, C. M. Lindamood, Riverside Electric Co.

C. R. Davis, J. J. Mlsna, G. B. Maloney, V. G. Evans, Via Motor Co., M. Stodghill, Carl Rohrer, M. A. Thompson, T. D. Prentice, L. D. Bearce, E. E. Earp, R. E. Babson, Henry Tarring, D. C. Davis, R. C. Moore, W. B. Aiken, Herman Huzel, R. C. Ferber, C. Maltzahn, F. Paul Broxy, William Taylor, Sr., Merrill H. Bridge.

C. P. Brown, L. C. Fischer, A. C. Averill, R. G. Atchinson, Ralph Dewberry, G. S. Horton, C. R. Thomas, Louis S. Doherty, Sr., F. W. Pitman, W. O. McKeithan, P. E. Johnson, F. C. Florine, C. Busch, I. Bloom, A. V. Cline, F. C. Williams, and John L. Martin.

Dealers Become Senators

Men in line for senator's positions were the dealers. Winners in this classification were: F. E. Reiber, E. B. Mathews, D. S. Richard, H. G. Hamilton, T. H. Bushnell, A. E. Morrison, H. J. Drezel, Edwin Pierce, H. W. Riley, C. M. Durell, William T. Notter, C. Keenan, Alfred L. Hart.

Wesley G. Gay, A. F. Kreissig, J. J. Byrne, O. A. Acuff, C. Hodgson, L. W. Symons, Ernest W. Allen, F. Parker Allen, L. W. Brainard, A. T. Wilks, G. S. Dunn, Howard Batt, Harry Walton, J. W. Reid, George O. Smith, J. F. Wilkins, B. A. Seiple, Wallace Keys, R. C. Knapp, William Waggoner.

H. H. Higgins, H. E. Ury, G. L. Jackson, G. L. Marshall, E. G. Taggart, L. E. Van Allen, M. R. Cook, P. C. Tucker, J. F. Reisenman III, H. W. Compton, J. H. Van Aernam, J. H. Fuller, R. S. Diggs, Henry Kruse, R. C. Anderson, E. R. Felber, T. S. Murray, H. E. Waring, Art Olson, W. W. Tolleson, E. C. Ferree, George Tschumi, and H. G. Voigt.

Champion Salesmen

Winning mayors (salesmen): J. R. Moylan, Stanley Lee, A. E. Austin, C. I. Couch, R. B. Maxwell, W. H. Grassmuck, A. S. Vincent, John Lang, C. R. Han, S. D. Bartlett, H. L. Eldridge, S. C. Meyers, Rene Briais, W. T. Dillon, E. T. Wood, C. L. McBee, H. F. Lallou.

E. C. Asbeck, J. B. Micka, Clayton Norris, H. C. Lee, J. F. Schmeiskors, F. C. Oakes, T. J. Trunnell, Jr., A. Tischendorf, J. Miller, C. B. Barnett, R. B. Soule; S. H. Hemphill, Samuel Lessing, C. W. Robinson, Virgil Hamm, L. E. Murtiashaw, Harry Hesse, J. B. Birchfield, B. Schindler, Marcus D. Bush, Jack Frost.

Gus Zurcher, Bill Givens, C. F. Ball, R. I. Mertz, Winslow Wetherbee, E. A. Talkington, P. C. Dollard, L. D. Fox, J. A. Dean, E. J. Sorenson, H. L. Mathews, William E. Ehlers, J. D. Paddock, P. M. Taylor, C. R. Johnson, Stanley McFadden, C. W. Noaks, J. L. Townsend.

SALESMAN USES CHRISTMAS APPEAL IN SEVEN SALES

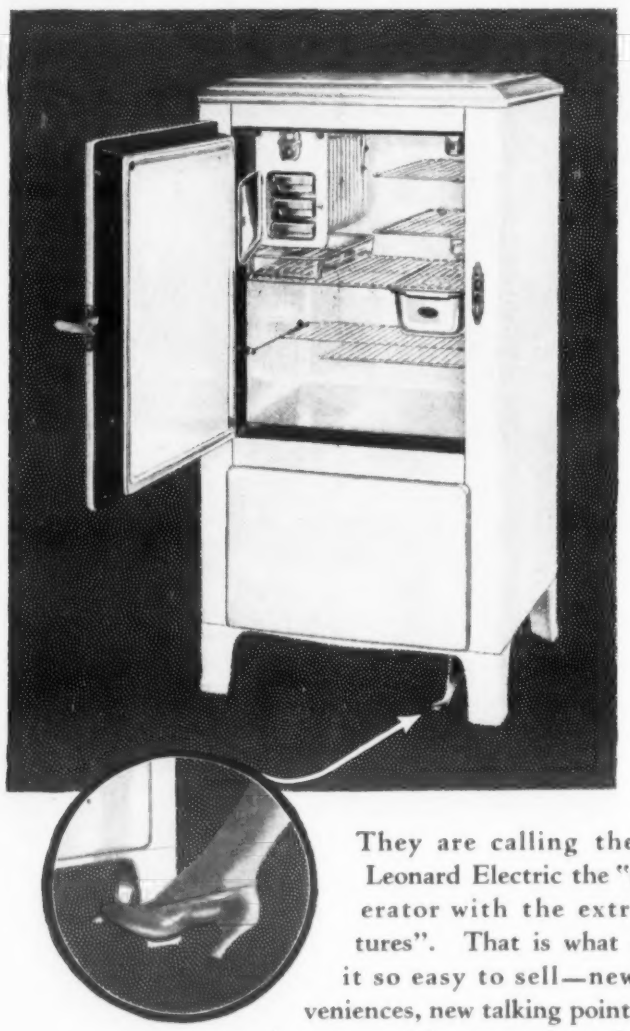
ST. LOUIS—C. E. Wildberger, quota-breaking household salesman of the Frigidaire organization here, has sold seven machines since Nov. 23 with the use of the Christmas sentiment appeal alone. The silver gift medallion is his only sales aid.

Last Christmas, when a similar medallion was introduced, Mr. Wildberger sold 25 household refrigerators with it. He sold 350 per cent of his annual quota last year, and so far this year has sold 217 per cent of quota.

McCORD TRAYS PACKED IN CHRISTMAS PACKAGE

DETROIT—A special Christmas package carrying a gift card as well as a special exchange card in case the ice trays are not the correct size, will be used to sell Easy-Out Ice Trays as Christmas gifts by the McCord Radiator & Mfg. Co.

After Christmas, dealers may remove the holiday wrappings and display Easy-Outs in the regular cartons. The plan was designed to cooperate with manufacturers and dealers who see possibilities for volume of sales in electric refrigeration accessories.



Only Leonard has the LEN-A-DOR—a touch of the toe and the door swings open.

The Refrigerator with the Extra Features

THE NEW

LEONARD

ELECTRIC

•

They are calling the new Leonard Electric the "refrigerator with the extra features". That is what makes it so easy to sell—new conveniences, new talking points, new beauty—without penalty of price.

Features like the LEN-A-DOR, for example, appeal instantly to buyers. So it is with the Chill-om-eter, the all-porcelain cooling unit, the Sanitrays, egg basket, vegetable crisper, improved hardware, broom-high legs, one-piece porcelain interior, and many others.

Some of these are exclusive with Leonard; others are found only in larger, more expensive electric refrigerators. And behind these "extras"—which command no extra price in Leonard—is quality of design and construction, resulting from more than half a century of experience in household refrigeration.

The new Leonard line (8 new models—2 all-porcelain) and the Leonard franchise deserve your investigation *now*, when buyers are demanding not only new and modern merchandise, but value that can be demonstrated. If you are interested in this unusual opportunity, wire or write without delay, as open territories are being rapidly closed.

LEONARD REFRIGERATOR COMPANY
14256 Plymouth Road, Detroit, Michigan

LEONARD

ELECTRIC REFRIGERATOR

(422)

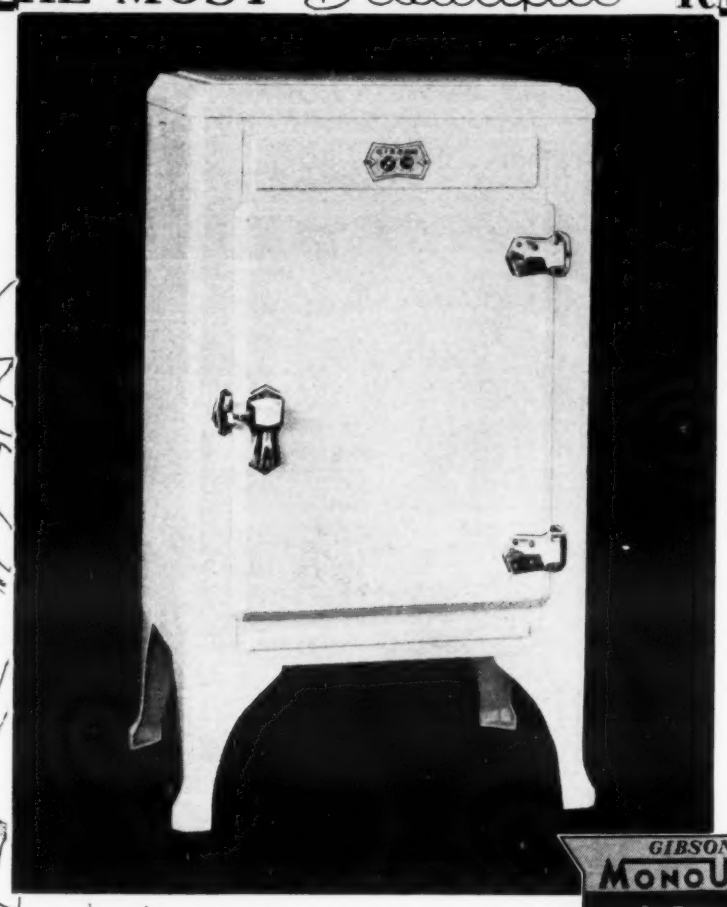
Sulphur Dioxide! For Direct Charging!

Every Container Analyzed "Pure" Bone Dry . . . Cylinders 2 to 150 lbs

ANSUL Chemical Co MARINETTE, WIS

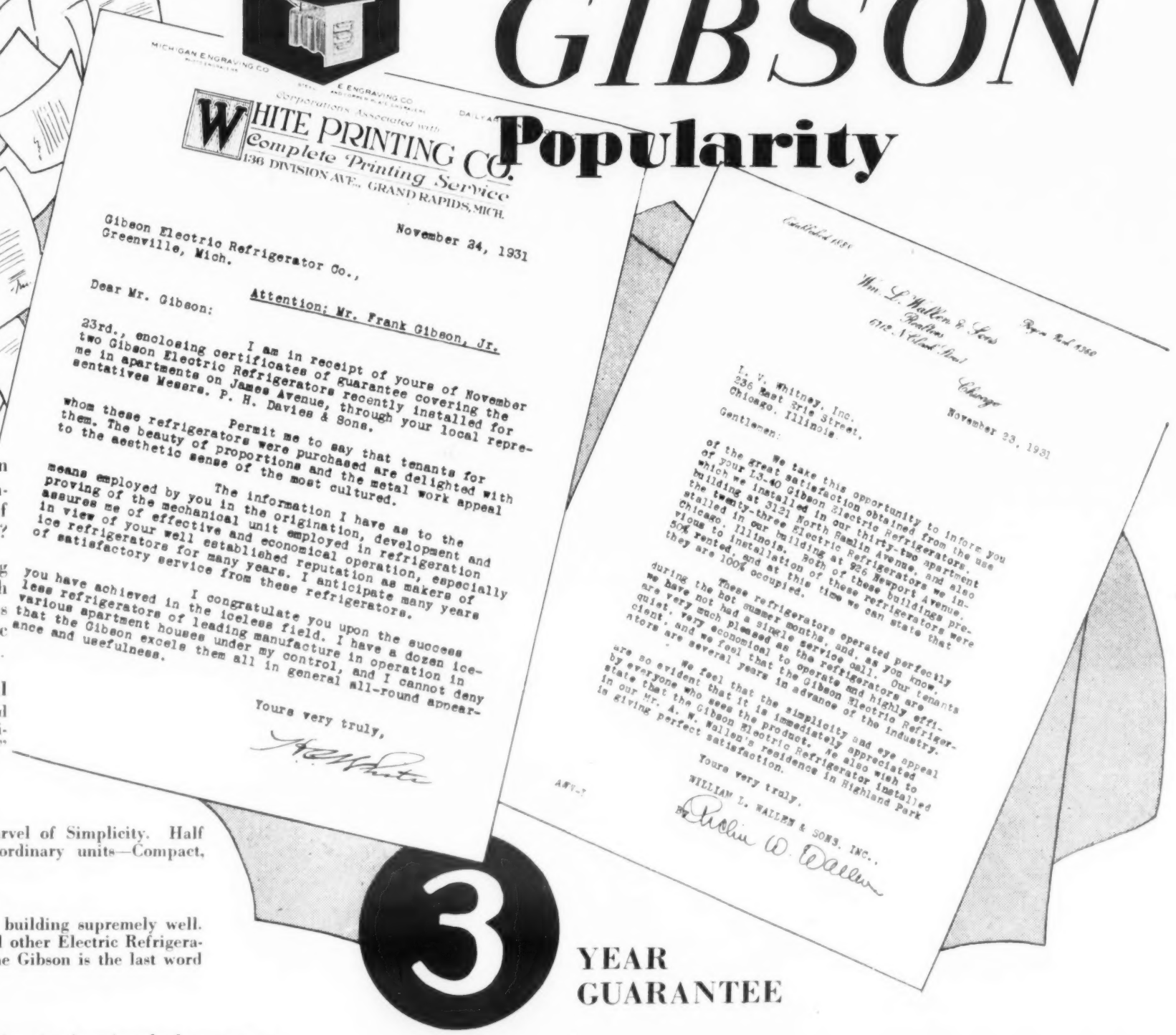
Also . . . . Ton Drums - Tank Cars

THE MOST *Beautiful* REFRIGERATOR IN THE WORLD



TRIBUTES COME POURING IN

Proof of *GIBSON* Popularity



MICHIGAN ENGRAVING CO. ... DALLAS

Corporations Associated with
WHITE PRINTING CO.
Complete Printing Service
136 DIVISION AVE., GRAND RAPIDS, MICH.

November 24, 1931

Gibson Electric Refrigerator Co.,
Greenville, Mich.

Dear Mr. Gibson:

Attention; Mr. Frank Gibson, Jr.

I am in receipt of yours of November 23rd., enclosing certificates of guarantee covering the two Gibson Electric Refrigerators recently installed for me in apartments on James Avenue, through your local representatives Messrs. P. H. Davies & Sons.

Permit me to say that tenants for whom these refrigerators were purchased are delighted with them. The beauty of proportions and the metal work appeal to the aesthetic sense of the most cultured.

The information I have as to the means employed by you in the origination, development and proving of the mechanical unit employed in refrigeration assures me of effective and economical operation, especially in view of your well established reputation as makers of ice refrigerators for many years. I anticipate many years of satisfactory service from these refrigerators.

I congratulate you upon the success you have achieved in the iceless field. I have a dozen iceless refrigerators of leading manufacture in operation in various apartment houses under my control, and I cannot deny that the Gibson excels them all in general all-round appearance and usefulness.

Yours very truly,

Established 1880

Wm. L. Wallen & Sons
Realtors
612 S. Wood Street

Chicago
November 23, 1931

I. V. Whitney, Inc.
236 East Erie Street,
Chicago, Illinois

Gentlemen:

We take this opportunity to inform you of the great satisfaction obtained from the use of your 13-40 Gibson Electric Refrigerators, which we installed in our thirty-two apartment building at 3131 North Hamlin Avenue, and also the twenty-three Electric Refrigerators we installed in our building at 926 Newport Avenue, Chicago, Illinois. Both of these buildings were rented and at this time we can state that they are 100% occupied.

These refrigerators operated perfectly during the hot summer months, and, as you know, we have not had a single service call. Our tenants are very much pleased as the refrigerators are quiet, very economical to operate and highly efficient, and we feel that the Gibson Electric Refrigerators are several years in advance of the industry.

We feel that the simplicity and eye appeal are so evident that it is immediately appreciated by everyone who sees the product. We also wish to state that the Gibson Electric Refrigerator installed in our Mr. A. W. Wallen's residence in Highland Park is giving perfect satisfaction.

Yours very truly,

WILLIAM L. WALLEN & SONS, INC.,

By Leslie W. Wallen

ANY-7

What is there about the Gibson **MONOUNIT** that has so completely won the confidence of leading Retailers everywhere?

. . . It's These Outstanding Advantages; advantages which mark Gibson undeniably as "The Most Advanced Electric Refrigerator of Today." . . .

Unusual Feminine Appeal

Acclaimed by Stylists and proved by comparison, "The Most Beautiful Refrigerator in the World."

Mechanical Perfection That Appeals To Men

Gibson **MONOUNIT** is a marvel of Simplicity. Half the weight—Half the Size of ordinary units—Compact, Sturdy and Positive.

50 Years of Knowing How

Gibson knows the art of cabinet building supremely well. Has built more cabinets Than All other Electric Refrigerator Manufacturers combined. The Gibson is the last word in cabinet efficiency.

Balanced Simplicity

The Gibson **MONOUNIT** refrigerator is stripped of every non-essential. No superficial selling points. Everything about the Gibson is there for a purpose. That's why Gibson offers greater convenience—greater efficiency and economy.

Dealer Cooperation

Gibson backs its Dealers to the limit with the most unique and resultful Refrigerator Sales and Advertising Plans ever launched. That's saying a lot, but we *do* say it because it's true. Prove it yourself.

Territories are rapidly being closed. Write or wire collect for complete information.

3 YEAR GUARANTEE

50 YEARS REFRIGERATION EXPERIENCE
OVER 3 MILLION SATISFIED USERS

GIBSON ELECTRIC REFRIGERATOR CORPORATION
GREENVILLE MICHIGAN

15 BUREAUS FORMED; CENTRAL BODY MEETS

(Concluded from Page 1, Column 5)

and make plans to establish new local units.

Another field man has covered the New England states under the direction of C. L. Edgar, regional director. Through Clarence Law, director of New York state, and B. A. Seiple, director of New Jersey, plans were laid to establish new bureaus there.

New personnel selected for the bureau during the month included M. J. O'Connell, who has been appointed state director of Delaware replacing Bryant White, who recently resigned. Mr. O'Connell will continue to act as state director for Maryland as well.

Tom C. Polk, formerly of the National Electric Light Association headquarters, Chicago, replaces F. J. Haas as state bureau director in Indiana.

Other activities of the bureau during the month included distribution of Christmas display material and envelope stuffers, a meeting of the plan committee to approve layouts and copy suggestions for early 1932 magazine advertising.

ELECTROLUX APPOINTMENTS MADE BY UTILITIES

MUNCIE, Ind.—Two new appointments in the Electrolux sales organization of the Indiana properties of the Central Public Service System have been announced by W. J. Tenbusch, general sales manager in charge of Indiana and Michigan regions.

Robert M. Conway was named special Electrolux sales representative for the Central Indiana Gas Co. at Anderson, while Robert J. Zeller has been appointed in a similar capacity for the Central Indiana Gas Co. at Muncie.

Judges In Frigidaire Contest Named

(Concluded from Page 1, Column 5)

ants must visit Frigidaire showrooms to obtain the entry blanks, thus providing a tie-in for Frigidaire prospects. prospects.

The contest is being conducted over a country-wide hook-up of 50 leading radio stations, the network of NBC-WJZ. Programs will be presented every evening, except Saturdays and Sundays, until Dec. 16, and the contest will close at midnight Christmas Eve.

The radio programs include music by the Frigidaire orchestra, "air demonstrations" of the features of Frigidaire electric refrigerators, and complete details of the contest.

Field reports show that thousands of contestants and Christmas shoppers are being attracted to Frigidaire display rooms as the result of the broadcasting.

4-FOLD ACTIVITY CARRIED ON BY RICHMOND BUREAU

RICHMOND, Ind.—Billboards, Christmas circulars, holiday displays and special local league activities are the contribution of the local bureau to the Fall refrigeration campaign.

To promote Christmas business the bureau has leased four poster boards and decorated them with light stringers and laurel. The bureau also has three chaser border bulletin boards carrying refrigerator ads.

A display is being maintained on the floor of the Municipal Electric Lighting and Power plant with a representative in constant attendance.

Bureau Christmas circulars are being distributed via mailing lists and through the cashier's windows.

BLACK HOLDS MARGIN IN TRAVEL CAMPAIGN

(Concluded from Page 1, Column 1)

trict 6 with 6,020 miles; L. S. Snyder of Johnson-Son-Crowen, Chicago, leads district 7 with 3,900 miles; W. E. Mott of the Fred R. Gamble Co., Dallas, Tex., high man in district 8 with 6,670; and L. R. Spates of the Ruebel Electric Co., Alhambra, Calif., leading district 9 with 4,690 miles.

J. Fieldsteel, salesman in the same organization as Allen Black, has 7,815 miles to date, more than many of the men who will make the trip to Mansfield.

Districts in order of their standing are: New York, first; Middle Atlantic, second; Northwestern, third; Central, fourth; Boston district, fifth; Southwestern, sixth; Southeastern, seventh; Buffalo district, eighth, and Pacific coast, ninth.

The Times Appliance Co. of New York City still holds the lead among divisions. The Edgar Morris Sales Co. of Washington, D. C., takes second place, forcing the A. R. Lindburg Co. of St. Louis down to third. The Elin Co., Newark, N. J., drops one place to fourth; Danforth Refrigerator Co., Cleveland, holds on to fifth place. LaMotte & Callaway, San Diego, Calif., standing fourth at the last report, goes down to sixth. Wisconsin Sales & Supply Co., Milwaukee; F. H. Johnson-Son-Crowen, Inc., Chicago; Westinghouse Electric Supply Co., Los Angeles, and Elin Co., Philadelphia, Pa., take the other three places.

BOSTON COPELAND DEALER MOVES OFFICE

BOSTON, Mass.—The Refrigerator Sales & Appliance Corp., Copeland refrigerator dealer here, has moved from 885 Boylston St. to 92 High St.

The

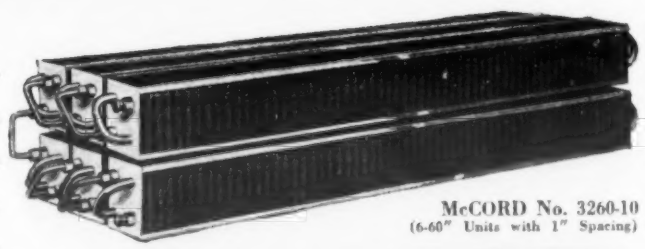
FLEXIBILITY

of

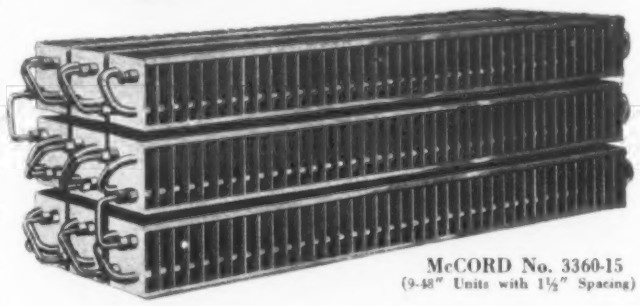
McCORD Evaporators

Enables You to Take Full Advantage of Different Bunker Sizes, Shapes and Locations

The very fact that McCord has standardized sizes so that only 36 different sizes give 297 possible combinations is important from an inventory standpoint. But the most important fact is that this standardization permits a degree of flexibility matched by no other line of evaporators.



McCORD No. 3260-10
(6-60" Units with 1" Spacing)



McCORD No. 3360-15
(9-48" Units with 1½" Spacing)

You are able to take full advantage of bunker sizes, shapes and locations—to place the evaporators inside the bunkers easily and quickly even when walls, partitions and other barriers offer a difficult installation problem. And you can place McCord Evaporators at the most efficient points inside the bunker, because you have a variety of different assemblies possible with equal cooling capacity.

If you have not already received a copy of the McCord Evaporator Catalog and data book, send for it. And on your next job, order a McCord Evaporator and install it. Your order will be shipped from the McCord factories in Detroit the same day your order is received.

REFRIGERATION ACCESSORIES DEPARTMENT OF McCORD RADIATOR & MFG. CO. DETROIT, MICH.

Hoover's Committee on Refrigeration Makes Report at Conference

(Concluded from Page 1, Column 3)

ference discussed material under four heads: heating, ventilating, and air conditioning; plumbing and sanitation; electric lighting and wiring, and refrigeration.

The report here described is a result of this plan, by which the conference was divided into four subcommittees.

Important Investment

While the committee recognizes that the amount spent on refrigeration in the home is not large in relation to the total expenditure for housing and equipment, it states that this amount, properly expended, may represent an important investment toward health and comfort.

The purpose of this report, which reviewed available research data on home refrigeration, is to guide the home owner in meeting his refrigeration needs.

The trend toward a greater amount of food space per family when it can be afforded is one characteristic of the refrigeration industry, the committee believes.

The amount of refrigerator space depends on the size of the family, the marketing habits, and the amount of entertaining done; a family of five needs 6 cu. ft. of storage space, it is estimated.

Electric Refrigeration

The abstracted report follows:

One hundred and fifty-six families reported use of electric refrigeration. The average of the incomes reported from families using electric refrigeration was $3,241. Most of these (96.6 per cent), obtained current from a central plant. The average cost of these refrigerators (1927 or before), was $294.86 and the average age at that time two years.

These refrigerators were used the year around. The average cost of operation, 54 housewives reporting, was $23.31 per year. This does not include repair service, interest, or depreciation.

A local survey (Journal of Home Economics, 21-667, 1929) reports from a typical town of around 3,000 homes, the following:

Eleven used no ice; 10 used mechanical refrigeration; 1,751 used ice; 1,480 of these used ice six months or less per year; 514 used cellars.

Market Survey

More recent figures have been collected by state and county extension agents, showing the extent to which refrigeration is being used in rural districts, however. These are shown in the following table:

State	No. of Farm Homes	Refrigerator Ice	Refrigerator Electric
Kentucky	280	50	1
Maryland	70	..	..
Nevada	Not given	..	..
New Jersey	223	53	12
North Dakota	583	10	1
Oregon	132	39	13
South Dakota	1,210	21	9
Vermont	439	28	3
West Virginia	171	11	0
Wyoming	536	..	..
Wyoming	213	43	2
Colorado	Not given	34	Ice and Electric
Washington	Not given	30	12
Mississippi	828	38	2
	(Owned Homes) 75	(Owned Homes) 48	1
	(Tenant Homes) 50	(Tenant Homes) 20	0

The report comments on various cooling devices used as a substitute for refrigerators, such as evaporation coolers, window boxes, and draught coolers, even mentioning cellars, springs, and wells.

That the use of such methods is still fairly widespread is shown by the fact that out of 2,350 home-makers from 37 states, 857 reported no means of refrigeration except these.

Oregon reports extensive use of draught coolers. A Washington architect reports their use in practically all houses built there, either as a supplemental to another form of refrigeration, or for use during cooler months.

The advent of mechanical refrigeration, he said, had made no difference in this situation. The following table indicates temperatures obtained in such coolers in relation to exterior and interior temperatures:

	Upper	Lower	Kitchen	Outdoors
9/11/31				
Time 6:30 P. M.				
Temperature	61	64	86	60
Time 8:30 P. M.				
Temperature	57	63	86	57
9/12/31				
Time 6:30 A. M.				
Temperature	54.5	54	77	47
Time 8:30 A. M.				
Temperature	57	63	87	59
Time 10:30 A. M.				
Temperature	60	64	80	60
Time 12:30 P. M.				
Temperature	63.5	64	82	63.5
Time 2:30 P. M.				
Temperature	64	64	77	64
Time 4:30 P. M.				
Temperature	64	64	75	64
Time 6:30 P. M.				
Temperature	63	63	69	63
Time 8:30 P. M.				
Temperature	60	64	75	60

Excerpts from the section on "Standards for Home Refrigerators" follow:

The housewife is primarily interested in suitable storage space at a satisfactory temperature range. Satisfactory temperatures may be obtained in home refrigerators by use of either ice or mechanical refrigeration. Satisfactory performance in either case is determined by the cabinet in which the refrigerant is used and the handling of the refrigerant in that cabinet.

The *size* of the cabinet should be stated plainly in terms of usable food storage space in cubic feet. This is measured in ice refrigerators by subtracting from the total interior volume all space occupied by ice compartment, the baffles, any space for air ducts or any obstructions preventing use for food storage.

Satisfactory temperatures must be maintained in the cabinet under standard conditions of operation. The milk compartment should maintain a temperature of 45 or below and the average temperature of the food compartment should not exceed 50, with an exterior temperature up to 90.

If a cabinet is to maintain satisfactory temperatures it must be well insulated, of rigid construction, with insulation held firmly in place, of such form that it will not settle and so installed as to make it as nearly as possible waterproof.

Insulation

The efficiency of the cabinet depends more upon the insulation and its method of installation than any one factor. The value of the insulation depends as much upon the method of installation as the kind of insulation.

Since this was written the tendency in modern refrigerator construction has been toward installation of the insulation so as to make it as nearly as possible water and air proof by tightness of inside and outside lining and fastening of the insulation to both walls by waterproof cement.

In testing refrigerators on the market satisfactory performance records the overall B.t.u. value which varies from 2.8 to 5.21 per sq. ft. per degree difference in temperature per 24 hours. This overall B.t.u. of the refrigerator is dependent not only upon the value of the insulation used, but is also affected by completeness of insulation cover, channels for heat loss through wall, tightness of doors, and the type of outside and inside wall, which points must be carefully checked in refrigerator construction.

Construction of Cabinet

The studies show that the lower overall B.t.u. value, while it increases the cost of the cabinet, materially decreases the cost of the refrigerant required to maintain standard temperatures.

In building the cabinet, *framing* must be rigid, strong enough to support all the materials entering into the construction of the box and the refrigerant.

The *inner lining* should be smooth, easily cleaned, with rounded corners and as nearly as possible water and air tight. Porcelain lining is desirable. A porce-

(Concluded on Page 16, Column 1)

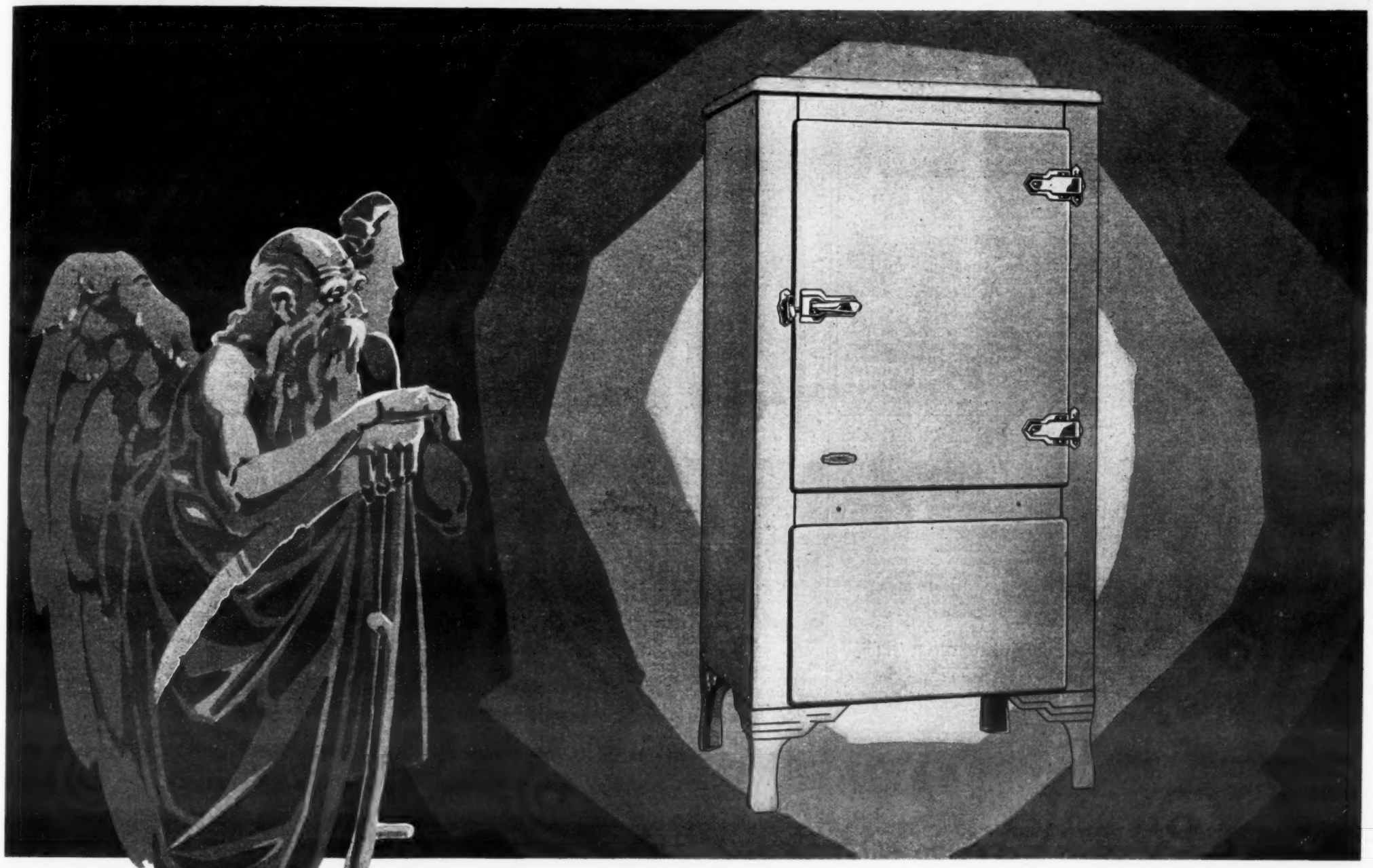
SIX SHREVEPORT DEALERS COOPERATE IN EXHIBIT

SHREVEPORT, La.—Six local refrigeration dealers cooperated in the joint electric refrigeration show which was held Nov. 16-19.

The rather unique method of awarding and distributing the many prizes offered the dealers an opportunity to get the visitors to inspect their booths and to hear the story of each refrigerator.

Each visitor was greeted at the door by a member of the Women's committee of the Southwestern Gas & Electric Co. and was offered a registration card upon which the name of each dealer and his particular make of refrigerator was printed. No card was eligible for the prize drawing unless signed by a representative of each booth, thus insuring contact with practically all visitors.

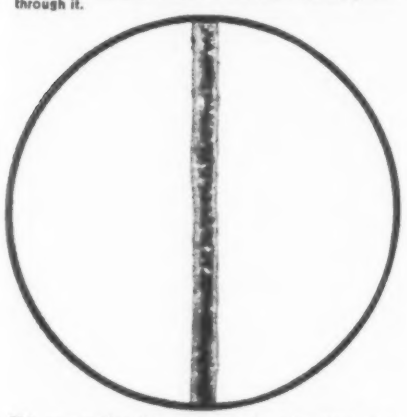
Dealers who participated in the show and makes which they exhibited are as follows: Alphonse Brenner Co., Brenner refrigerators; A. G. Riddick, Inc., General Electric; Booth Furniture Co., Majestic; Johnson Furniture Co., Servel; E. P. McCollister, Inc., Frigidaire; and Southwestern Gas & Electric Co., Kelvinator.



Each of these photographs is magnified 20 diameters.

Time Suspends Judgment

This photomirrograph shows a cross-section of a sealing paper reputed to be the best waterproof paper made. It is impregnated with asphalt. Water vapor readily passes through it.



This cross-section shown through the microscope is a standard duplex Kraft sealing paper. Its thin layer of asphalt is sandwiched between two layers of paper. It offers insufficient barrier to water vapor.

Below: This is the special sealing paper made and used for wrapping each slab of Dry-Zero insulation. Its surface is perfectly smooth and provides the most perfect moisture seal known. It will neither crack nor flow at extreme temperatures.

No matter what results may be evident from laboratory tests, actual usage over a period of time must determine final judgment—affirming or refuting the claims of the laboratory. And difficult it is to simulate in any testing room the conditions of actual ageing.

We hear of special equipment that can produce the wear and tear of months in a few short hours or days—a speeding up of the ageing process. For many products these methods may furnish admirable results. But for others—particularly refrigerator insulation—customary tests fall far short of giving accurate facts. Only time will tell.

Dry-Zero Pliable Slab insulation tests well in the laboratory—in fact, tests by such dependable and accepted authorities as the U. S. Bureau of Standards and various national institutes show Dry-Zero to be the most efficient commercial insulant known. In addition, the natural resistance of Dry-Zero to moisture absorption and the exceptional Dry-Zero moisture-seal assure permanent efficiency.

Eventual disaster to an electric refrigerator can only be averted by conforming to the inevitable laws of nature. If moisture penetrates the insulation not only is its efficiency lowered but in most cases serious deterioration follows. This does not happen suddenly. And unless protection equal to that offered by Dry-Zero is provided, disaster is bound to result with the passing of months.

The photomicrographs at the left tell the story as seen through the microscope. The first two illustrations show the best sealing paper on the market—ineffectual at best. At the bottom is shown the special Dry-Zero wrapping sheet with a thick coating of asphalt that is smooth, glass-like and unvarying in its uniformity. This asphalt coating is made to Dry-Zero specifications and the Dry-Zero seal is the most nearly perfect vapor seal known.

There can be no compromise with Time on refrigerator efficiency. "Getting by" for the present may prove a boomerang later. But those manufacturers who are using Dry-Zero Pliable Slab have no concern about the future efficiency of the insulation in their refrigerators. Time already has proved the permanent effectiveness of Dry-Zero.

DRY-ZERO CORPORATION
Merchandise Mart - Chicago, Illinois
Canadian Office - 465 Parliament Street, Toronto

DRY·ZERO

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN

S. E. D. OFFERS SALES HELPS FOR DEALERS

NEW YORK CITY—The Society for Electrical Development is again presenting the large five and one-half foot Santa Claus as one of several sales helps for merchants displaying electrical Christmas gifts.

The society also offers a 3-ft. flashing candle cutout with wreath and tag for counter or window display. The flame is transparent, and conceals the shadow-box in which a lamp is placed to flash off-and-on or act as a steady beacon for the message on the card, "Give Something Electrical."

Other sales helps are a pair of bell-and-wreath cutouts, with the message "Make the Present Count Tomorrow," and "Wise Men Bring Electrical Gifts."

Prices for all these are nominal; the Santa Claus cutouts are $2.50 each, or less in dozen lots; the flasher candle, $1.25 each; the bell-and-wreath a dollar the pair. The entire Christmas package (Santa and the three other cutouts) sells at $4.50.

RINEHART TRANSFERRED TO DETROIT BRANCH

DETROIT—Phillip E. Rinehart, formerly of the retail sales development department of Westinghouse Electric & Mfg. Co. at Mansfield, has been appointed manager of the refrigeration department of the Detroit branch, Westinghouse Electrical Supply Co., at 547 Harper Ave., Detroit.

COMPTROLLER TRANSFERRED TO FRIGIDAIRE FACTORY

ATLANTA, Ga.—R. C. Banker, head of the comptroller's department for Frigidaire's southeastern region for the last year has been transferred to the factory. R. C. Golt took his place.

Feeding Families By Sales Leads

CLEVELAND—James C. Hill Electric Refrigerator Sales Co., 12516 Shaw Ave., Cleveland, is offering a basket of food sufficient to feed an average family for a whole week to any family designated by any person who is responsible for the sale of a Copeland electric refrigerator.

In making this offer Mr. Hill says:

"In our own city and many others, an appeal has been made to feed a family. We decided that we would donate $5 out of our profits to the Community Fund for every Copeland electric refrigerator which we sold.

"Each person who helps us to sell a Copeland, or who gives us the name of a prospect whom we can sell, may name a family for each refrigerator so sold; and we will supply those families with the basket of food."

ENGLISH CATERER TO USE 2,200 ELECTROLUX UNITS

LONDON, Eng.—When an order of 1,000 Electrolux ice cream cabinets is made after the first of the year, J. Lyons & Co., caterer, will have 2,200 Electrolux ice cream cabinets in operation, according to officials of Electrolux.

The order for 1,000 is the third placed this year, 500 and 700 being ordered on two previous occasions.

HOLBROOK BRANCH OPENS

PALO ALTO, Calif.—Holbrook, Merrill & Stetson, Inc., of San Francisco, have opened a branch at 219 University Ave.

Second Prize Winner

Col. F. J. Paxon, Kelvinator distributor at Atlanta, presents $1,250 second prize check to Mrs. W. H. Pickett for comparison letter.

Four Salesmen Prepare Thanksgiving Dinner

ALLENTOWN, Pa.—Four salesmen of the Pennsylvania Light and Power Co. recently introduced a new wrinkle in sales meeting stunts when they demonstrated their knowledge of the culinary art by preparing a Thanksgiving dinner for their brother salesmen.

The meal was prepared in salesroom.

Something New for Refrigeration

SAN FRANCISCO — An AH-3 model Frigidaire electric refrigerator installed by Rudolph T. Haas is keeping strange company on the fifth floor of the new Mills Tower building.

The customary associations of a refrigerator, such as stoves, sinks, cabinets, tables and chairs, are lacking. Instead, this machine is flanked by sun-ray lamp hair driers, steam towel sterilizers, cushioned barber chairs, manicurists' paraphernalia, and the other trappings that go to make up "the finest tonsorial parlor in the west."

The job of the Frigidaire in this setting is to keep moistened towels chilled for use on customers after shaving, shampooing, and massaging. It is furnishing "the only service of its kind in San Francisco."

In a newspaper advertisement announcing the opening of the shop, the statement "Frigidaire Cooled Towels" was featured in bold type beside a line drawing of the machine.

Wirt Ewing is proprietor of the barber shop.

C. I. T. ACQUIRES ASSETS OF MORTON MEINHARD CO.

NEW YORK—Commercial Investment Trust Corp. has acquired the business of Morton H. Meinhard and Co., Inc., textile factors, and also has contracted with Greeff & Co. to acquire the accounts factored by that organization.

It is the plan to combine these businesses under the name of Meinhard, Greeff & Co., Inc., to be conducted as an independent operating unit of the C. I. T. organization.

Edward F. Addiss, who was associated for the past 20 years with Mr. Meinhard and who has been president of the firm since Mr. Meinhard's death earlier this year, has been elected head of the new company.

Enno Greeff and Ernest Greeff will join the merged organization in executive capacities. All of the other executives of Morton H. Meinhard and Co., Inc., will continue in their present capacities.

BAILEY-COLE SELLS WATER COOLERS TO GUILD

BROOKLYN—The sale of Electrolux water coolers for the Brooklyn Masonic guild was made by the Bailey-Cole Electrical Co., Inc., instead of the Brooklyn Union Gas Co. as formerly stated.

200 SOUTHWEST GAS MEN DISCUSS SALES

HOT SPRINGS, Ark.—The second Southwest natural gas sales conference was held here recently at the Arlington hotel with an attendance of nearly 200 gas company managers and executives. Although the conference was sponsored by the American Gas Association, attendance was limited primarily to the Southwest.

Sterling A. Lipscombe, new business manager of the Little Rock Gas & Fuel Co., presided on the opening day.

The welcoming address was given by R. W. Curran, president of the Arkansas Utilities Association, followed by a talk on "Advertising for Future Sales," delivered by Paul Renshaw of the Memphis Power & Light Co.

E. J. Hatzenbuehler of the Lone Star Gas Co., Dallas, Tex., closed the morning with "Holding and Developing the Industrial Load."

Chester May, Community Natural Gas Co., Dallas, Tex., served as chairman for the afternoon meeting.

He introduced as first speaker H. D. Ittner, Texas Public Service Co., Austin, who spoke on "Developing Dealer Cooperative Sales Where Gas Company Merchandises."

This talk was followed with "Promoting Sales Where Gas Company Does Not Merchandise," by Walter H. Lane. Oklahoma Natural Gas Corp., Oklahoma City.

Willard C. Weigel of the Lone Star Gas Co., Dallas, next spoke on "Advertising for Promoting Dealer Sales," and was followed by A. E. Higgins, field representative of the American Gas Association, with a paper on "National Trends in Dealer Cooperation."

During the morning of the second day E. C. Whitcomb of the Lone Star Gas Co., Dallas, talked on "Central Plant House Heating in the Southwest District," followed by P. C. Tucker, Arkansas Power & Light Co. of Pine Bluff, who discussed "Promoting Other Forms of House Heating." C. K. Patton, Texas Cities Gas Co., Dallas, closed the session with "Market Possibilities for House Cooling."

The afternoon of the final day was devoted almost entirely to the subject of gas refrigeration. W. Jennings Young of the Oklahoma Natural Gas Corp., Tulsa, was chairman and introduced Mr. Lipscombe, who had for his topic "Selecting, Training and Organizing the Sales Force."

Next came several reports entitled "From the Firing Line," delivered by R. C. Rogers, Texas Cities Gas Co., El Paso, and C. C. Baker, Oklahoma Natural Gas Corp., Tulsa.

"Promoting Gas Refrigeration Sales," was the subject presented by C. B. Wilson, new business manager, Southern Cities Distributing Co., Shreveport, La. F. E. Sellman, vice president of Electrolux Refrigerator Sales, Inc., closed with "The Southwest Market for Gas Refrigeration."

An exhibit of Electrolux sales promotion campaigns, direct mail literature and sales plans was also presented to members attending the conference by G. H. Schlatter of the Electrolux sales promotion department. More than 80 delegates visited this exhibit.

2 REFRIGERATION DEALERS COOPERATE IN EXHIBITS

SHEBOYGAN, Wis.—The Sheboygan Appliance Co., handling Frigidaires, and the G. N. G. Hardware and Heating Co., Norge dealer, were two of 30 concerns cooperating in a three-day merchandise exposition here late in November. More than 16,000 persons attended the show.

The Sheboygan Appliance Co. awarded a Frigidaire to the highest bidder together with an offer of a four-day trip to Washington, D. C., with all expenses paid. A demonstration was held continuously throughout the exposition.

The G. N. G. Hardware and Heating Co. also staged an auction in connection with its display and offered a Norge refrigerator to the highest bidder.

General Electric refrigerators were displayed by the Wisconsin Power & Light Co. in connection with the show.

The number of persons attending the show was 3,000 more than attended last year.

Across the Street

C. I. T. Refrigerator Financing Service is offered through our Local Office near you. When you want a rush check-up on a prospective purchaser our credit man on the spot will immediately investigate and report, at no expense to you. As sales are made you send along the contracts and our Local Office promptly gives you cash. Likewise collections are tactfully handled by a trained force of local C. I. T. men, who know conditions in your territory.

This intimate, "across the street" type of service avoids the mistakes, delays and red-tape of long-range contacts. Dealers in all parts of the country are turning to C. I. T. as a source of funds to keep their own capital liquid, and for the financial strength and dependability of a nation-wide banking institution.

THESE C. I. T. LOCAL OFFICES WILL WELCOME YOUR INQUIRY

Abilene - Akron - Albany
Altoona - Amarillo - Asbury Park
Asheville - Atlanta - Augusta - Austin
Baltimore - BayShore - Beaumont - Beckley
Binghamton - Birmingham - Bloomington
Bluefield - Boston - Bronx - Brooklyn - Buffalo
Butte - Camden - Charleston - Charlotte - Chicago
Cincinnati - Clarksburg - Cleveland - Columbia
Columbus - Dallas - Davenport - Dayton - Denver - Des Moines
Detroit - El Paso - Erie - Florence - Fort Wayne - Fort Worth - Fresno
Glens Falls - Grand Rapids - Green Bay - Greensboro - Greenville
Hagerstown - Harrisburg - Hartford - Hempstead - Hickory - Houston
Huntington - Indianapolis - Jackson - Jacksonville - Jamaica - Jamestown
Jersey City - Johnson City - Kansas City - Kenosha - Knoxville - Lansing
Lexington - Lincoln - Little Rock - Los Angeles - Louisville - Manchester - Memphis
Miami - Milwaukee - Minneapolis - Montgomery - Montpelier - Mt. Vernon
Nashville - Newark - New Haven - New Orleans - New York - Norfolk - Oklahoma City
Omaha - Orlando - Owensboro - Perth Amboy - Philadelphia - Phoenix - Pittsburgh
Portland, Me. - Portland, Ore. - Poughkeepsie - Providence - Raleigh - Reading - Reno
Richmond - Roanoke - Rochester - Sacramento - St. George - St. Louis - Salt Lake City - San
Antonio - San Diego - San Francisco - San Jose - Seattle - Sioux Falls - South Bend - Spokane
Springfield - Spring Valley - Stockton - Syracuse - Tampa - Toledo - Tucson - Tulsa - Utica
Washington - Watertown - Wheeling - White Plains - Wichita - Wilkes-Barre - Youngstown

C.I.T. CORPORATION
ONE PARK AVENUE, NEW YORK
A Unit of
COMMERCIAL INVESTMENT TRUST CORPORATION
CAPITAL AND SURPLUS OVER $90,000,000

Subsidiary and Affiliated Operating Companies with Head Offices in New York · Chicago · San Francisco · Toronto · London · Berlin · Brussels · Paris
Copenhagen · Havana · San Juan, P. R. · Mexico City · Buenos Aires · Sao Paulo · Sydney, Australia — — — — Offices in more than 160 cities

CONDENSERS

STANDARD SIZES OR TO YOUR SPECIFICATIONS

FINNED TUBING

FOR BOTH HIGH AND LOW PRESSURE SYSTEMS

BUSH MFG CO FINNED TUBING HARTFORD CONN

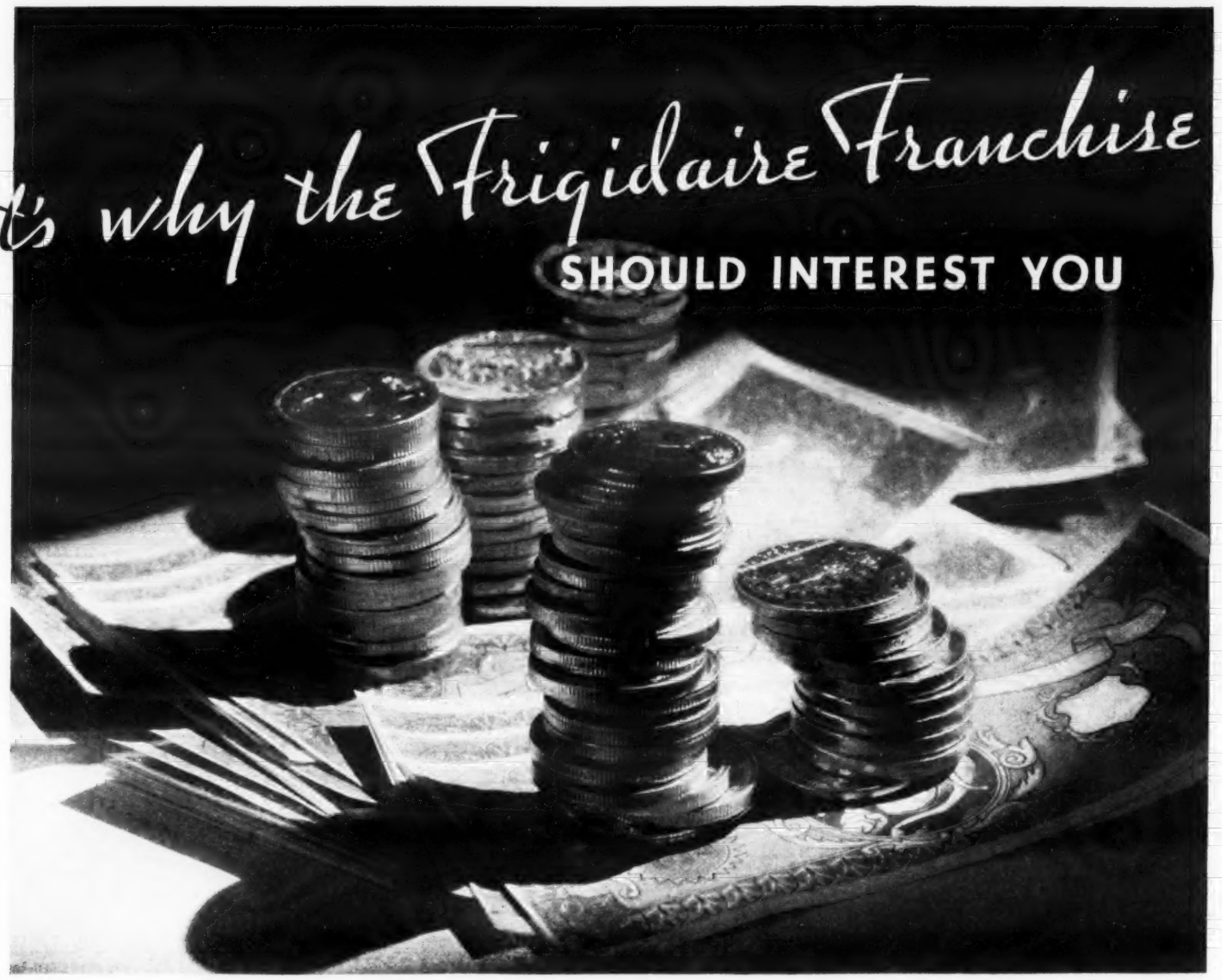
IN COPPER, BRASS ALUMINUM OR STEEL

THE BUSH MFG. CO.
HARTFORD, CONN.

W. H. MARK HANNA 6-247 General Motors Bldg. DETROIT, MICH.
REFRIGERATOR APPLIANCES, CHICAGO VAN. D. CLOTHIER, LOS ANGELES

GREATER PROFITS
OVER A LONGER PERIOD

That's why the Frigidaire Franchise story
SHOULD INTEREST YOU



Specially planned dealer sales campaigns that are unusual, effective and practical—direct-mail advertising so good that it has consistently won *first prizes* for several years in competition with hundreds of other campaigns—radio advertising that is different, that brings prospects into showrooms—a steady supply of usable sales suggestions—window displays that stop the passers-by—these are some of the reasons why Frigidaire dealers make money.

And, of course, Frigidaire is a known product of proven value and dependability. More than 2,000,000 satisfied users are telling their friends about Frigidaire. And the backing of General Motors not only makes Frigidaire easy to sell but gives added prestige to Frigidaire dealers.

Mail the coupon now for complete information.

FRIGIDAIRE
A GENERAL MOTORS VALUE

MAIL THIS COUPON FOR FRANCHISE FACTS

FRIGIDAIRE CORPORATION,
Franchise Division, Dayton, Ohio.
Gentlemen: Send me the complete story about your franchise.

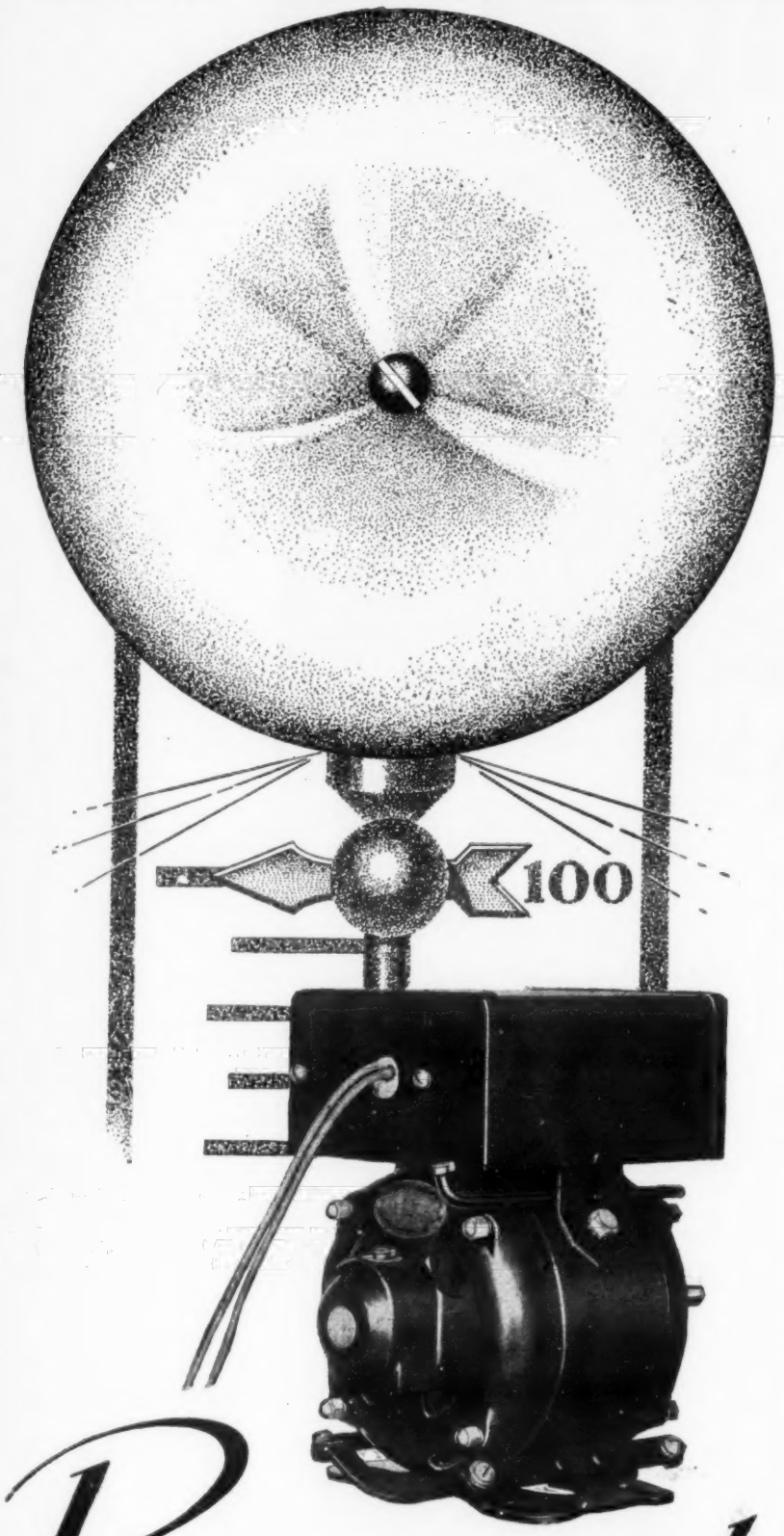
Name.....

Business.....*Address*.....

City.....*State*.....

1-1146

G-E TYPE KC



Rings the bell!

THE Type KC *"care-free"* capacitor-motor represents the highest achievement in refrigerator motor design. It is the *correct* motor for your refrigerator.

Try it . . . you also will say it "Rings the Bell."

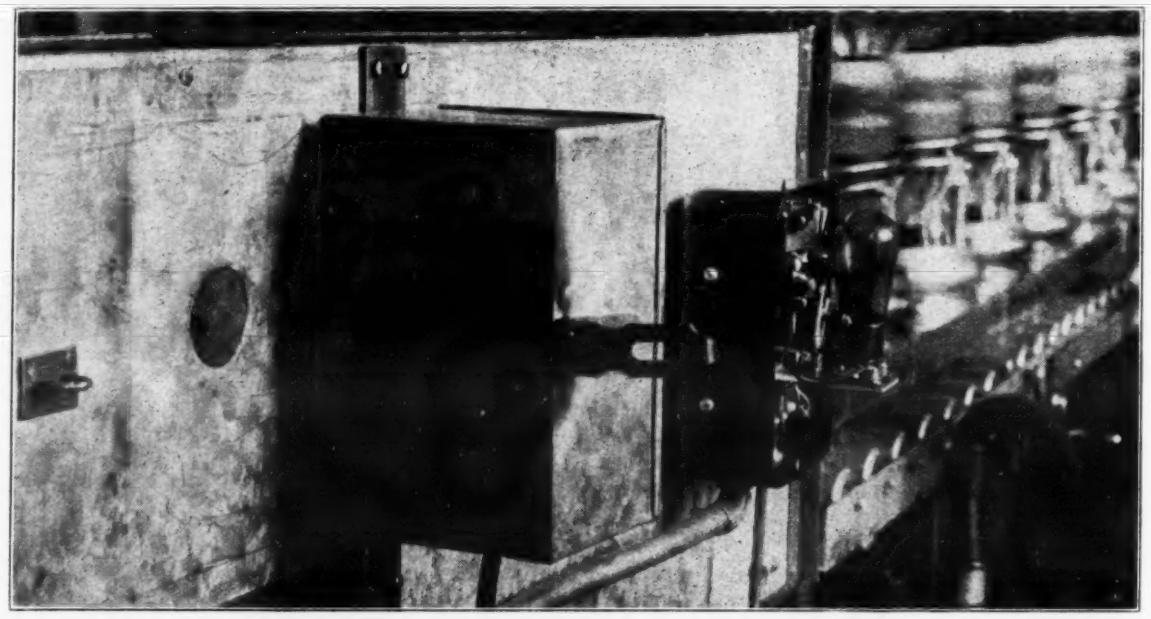
Ask your nearest G-E office to give you complete details about the Type KC—the "care-free" motor that rings the bell!

210-153

GENERAL ELECTRIC

Technical Developments

Compressors Manufactured for General Electric Refrigerators Are Counted by Photoelectric Tube



General Electric condensing units pass down the production line to be counted by interception of a beam of light directed, across the line of movement, at a photoelectric tube on the other side.

* * *

PHOTOELECTRIC TUBE COUNTS G. E. UNITS

By B. S. Havens
General Electric Co.

BECAUSE electron tubes are so unlike the control devices with which industry has long been familiar, their introduction into industrial operations was to a certain extent enshrouded in an atmosphere of mystery and it was generally believed that an understanding of their principles required a highly specialized knowledge.

The occasion for these false impressions was later removed by the standardization and production of complete electronic control devices in unit form, which has made their adaption to average industrial applications as simple as that of any other standard control device. As the result, many hundreds of photoelectric relays are now in use for various industrial purposes and a large number of applications of Thyratron tubes have been made.

Useful in Many Industries

Because of its flexibility of adaptation to a wide range of control purposes, it has a potential usefulness in practically every industry; and therefore there remains but for each industry to give consideration as to how it can utilize this new control device.

The vast majority of tube applications falls into two general classifications: (1) those in which a Thyratron tube is used as a valve to govern the amount of electricity fed to motors, lights, or other devices, and (2) those in which a photoelectric tube, acting as a relay, controls an operation such as counting, starting or stopping motors, lighting signal lamps, etc.

Control by Thyratrons

The utility of a Thyratron tube as a valve depends upon its ability to pass current of large amounts whose magnitudes may be accurately controlled by an electrode.

This control may be exercised in either of two ways: (1) by the application of a voltage of predetermined magnitude to the grid of the tube, to start or stop current flow, or (2) by changing the phase relationship between the grid and anode (with alternating current applied to the grid), to govern the average amount of current.

Practically, this means that the Thyratron tube can be used to start or stop electrical operations, or to control them during operation. A simple case of the start-stop control is furnished by a demonstration installation of an automatic door-opening mechanism in the research laboratory of the General Electric Co.

This door may be opened by merely tapping with the hand on a metal plate, in the wall outside, in accordance with a definite code. Each time the plate is tapped the electrical capacity of the tapper's body results in a voltage of sufficient magnitude being impressed on the grid of a Thyratron tube to cause the tube to pass current and set coded relays to work. If the tapping has been done correctly, the final relay will function and cause a motor-driven mechanism to open the door.

Intermittent Control

An industrial application of this principle is found in the control for intermittent line and spot welding machines. Very high speeds of interruption are made possible by the use of Thyratron tubes—a thousand or more interruptions a minute being entirely feasible.

In the welding machine application the Thyratron tube acts as a relay which has many advantages over the mechanical type, because it has no inertia, or opening and closing contacts to stick, burn, or wear away. The latter item is an important one, for replacements of contactor tips must be made on every eight-hour shift in some installations.

Motor Switch in Grid Circuit

In this case the control is obtained by means of a motor-driven cam switch in the grid circuit of the Thyratron tube. The motor is run at the speed at which it is desired to make the welds; and the cam switch intermittently imposes a voltage on the grid, thereby causing the tube to pass current intermittently.

The passing of current acts as a short circuit on one winding of a series transformer, thus varying the impedance of the other winding which is in series with the primary of the welding transformer.

Probably the most popular use of electron tubes—and certainly the most diversified in application—is the use of photoelectric tubes as relays to govern industrial operations of all kinds. A photoelectric tube has the peculiar property of passing electric current—weak but still usable—when light falls on its cathode.

What actually happens is that the cathode, when illuminated, emits electrons which pass to the anode and thus permit passage of an electric current. This current, if amplified by another electron tube known as a Pliotron tube, can be used to actuate a relay that in turn controls the operation of electric devices of various kinds.

From a practical standpoint this means that, where the operation of machinery provides—or can be made to provide—a means for interrupting or changing the intensity of light, the photoelectric relay can be used for control purposes.

Used in Refrigerator Manufacture

One of the simplest examples of this is in counting. There are a number of counting applications in General Electric plants, a typical instance involving a conveyor in refrigerator production. As the refrigerator units pass along they intercept a beam of light from a source on one side of the conveyor to a photoelectric tube (in a suitable housing to exclude extraneous light) on the other side.

The electrical impulses stimulated in the photoelectric tube are amplified by the Pliotron tube to an amount sufficient to actuate an electric counter on the foreman's desk.

Other counting operations, almost identical in principle, are being carried on in theaters, in vehicular tunnels, on highway bridges, and in many industrial processes where it is desired to record the amount of human or vehicular traffic, or the rate of production flow.

By directing a focused beam of light across the path to a doorway, a suitably located photoelectric relay can be made to actuate a mechanism that opens the door on the approach of a person wishing to pass through. This has found practical application in hotels and restaurants where waitresses burdened with heavy trays may easily pass back and forth between the dining room and kitchen without physical effort or hazard in opening the door.

Automatic Door Openers

The equipment is so designed that the door closes after sufficient time has elapsed to allow the waitresses to pass through. Installations of this kind have been made by the Stanley Co. at the Wilcox pier Restaurant, Savin Rock (Conn.), and by the Stevens Hotel in Chicago.

Other important uses to which the photoelectric cell has been put are in the control of wire tension in wire-drawing in General Electric's Schenectady plant; control of stage lighting in the new Earl Carroll Theater, New York City; distributing mail sacks at railroad terminals; controlling the cutting and folding operations in paper napkin manufacture; and many other applications.

DEHYDRATED COPPER TUBING

Highest quality seamless Copper Tubing. Plain or Tin Plated

Made to A. S. T. M. specifications (B68-30T). Ready for quick installation. Prompt shipment

WOLVERINE TUBE CO.

SEAMLESS COPPER BRASS & ALUMINUM

1491 Central Ave. Detroit, Mich.

The Purest Sulphur Dioxide

EXTRA DRY ESOTOO

TRADE MARK REG'D U. S. PAT. OFF.

Refrigeration Grade. Pure, easy to handle, does not deteriorate. Guaranteed not over 50 parts moisture per million.

Prompt shipments from own or agents' stock all over U.S.A. Write or wire where we can serve you.

VIRGINIA SMELTING COMPANY
West Norfolk, Va.
121 State St., Boston 75 West St., New York

and Late Patent Issues

40 BELOW OBTAINED IN NEW LIPMAN JOB

CHICAGO—One of the three low-temperature experimental rooms for the Botany Laboratory of the University of Chicago in which the General Refrigeration Co. of Beloit, Wis., has just installed the refrigeration equipment, a temperature of –40° is maintained. The other two rooms have temperatures of 15 and 32° F., according to Lipman engineers who made the installation. Temperatures are automatically maintained within a range of 1° F., they claim.

Twelve inches of cork board insulate the 40 below room which measures 12 ft. 2½ in. by 9 ft. 6 in. by 6 ft. 9 in. The 15° F. room measures 13 ft. 6½ in. by 10 ft. 4 in. by 6 ft. 9 in., and has 6 in. of cork on all sides. The 32° room has 4 in. of cork and has dimensions of 13 ft. 2½ in. by 10 ft. 4 in. by 6 ft. 9 in.

2 Compressors Used

Because of the fact that the low suction pressure required to maintain a –40° temperature decreases the capacity of the refrigerating machine and increases the cost of operation, it was decided to use two compressors, one to handle the sub-zero room, the other at a higher and more economical suction pressure, to operate the two other rooms.

A Lipman model 1010 condensing unit was installed for the sub-zero room, and operated at a 19-in. vacuum (an ammonia temperature of –61° F.), according to company engineers. The machine speed was reduced to 130 r.p.m., and the clearance between the piston head reduced to a minimum to increase efficiency at the low suction pressure.

Cooling Coil Calculations

The 15° and 32° rooms are refrigerated by a type 310 Lipman running at 395 r.p.m., and piped for double suction, that is, the 15° room is cooled by one cylinder, the 32° by the other.

Estimating the amount of cooling coil for each of the two rooms operating from the one compressor was one of the major problems, the engineers report, because the load had to be balanced on both cylinders and the rooms had to be cooled to the proper point in exactly the same length of time.

Two coils, each containing 220 ft. of 1-in. extra heavy galvanized steel pipe, were placed on each side of the 15° room, while similar coils with 99 ft. of pipe were installed along each side of the 32° room.

Thermostatic Control

Temperature in each of the three rooms is automatically controlled by thermostats. In the lowest temperature room, the thermostat actuates a relay which in turn controls the operation of the machine.

In the other two rooms, the thermostat actuates a liquid control valve which shuts off the ammonia supply to that room, thereby regulating the amount of refrigeration.

The liquid control valves are wired into the machine control circuit so that the machine will run when either or both of these valves are open, and shut down only when they are both closed.

FOUR ENGINEERS ORGANIZE INDUSTRIAL SERVICE

NEW YORK CITY—A service organization to facilitate the marketing of industrial products has been formed by Dr. H. H. Sheldon, H. A. Morse, L. W. Hutchins, and Dr. W. H. Easton of this city. The new company, with offices at 191 W. 10th St., wil be known as Sheldon, Morse, Hutchins and Easton.

This group plans to furnish manufacturers with sales research, advertising, and publicity service, based on their experience in the promotion and sales of chemicals, electrical equipment, building materials, industrial and marine supplies and machinery, scientific apparatus, and other lines.

Among the services to be rendered are: the determination of markets, evaluated for consumption and profit; the determination of salesmen's needs; the organization of sales record systems; the planning and execution of magazine and direct-mail advertising; patent surveys; and the preparation of manufacturer's exhibits, etc.

REGIONAL MANAGER CONFERS WITH COAST DISTRIBUTOR

SEATTLE, Wash.—Jay Kennedy of Los Angeles, Pacific Coast regional manager of the Copeland Co., had a week's conference with Eckhart Bros., Inc., Washington distributor.

According to Mr. Kennedy, his region's sales are 70 per cent above those of the corresponding period of 1930.

MAJESTIC STORE OPENED

CHARLOTTE, N. C.—The Modern Appliance Co., handling Majestic refrigerators and radios, held its formal opening Nov. 28. The new store, located at 26 S. Tryon St., is managed by Arthur Venige.

Latest Patents Issued In Refrigeration Field

ISSUED NOVEMBER 17

(Continued from Last Issue)

1,832,121. REFRIGERATING APPARATUS. William C. Holbrook, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Oct. 30, 1928. Serial No. 316,099. 4 Claims. (Cl. 220—15.)

1. An insulated refrigerator cabinet having metal panels with adjacent and parallel edges, an angularly cross sectional metal spacer fitting around one of said edges and having a portion between said panels, said portion having an enlarged integral head, and said spacer being provided with rubber cushioning means adjacent said edges.

1,832,122. REFRIGERATING APPARATUS. William C. Holbrook and Lewis C. Luneke, Dayton, Ohio, assignors to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Oct. 30, 1928. Serial No. 316,100. 3 Claims. (Cl. 220—15.)

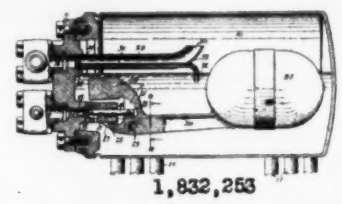
1. In a refrigerator having metal panels with adjacent and parallel flanges, an angularly cross sectional rubber spacer fitting around one of said flanges and having a portion between said flanges, said portion having an enlarged head and a plurality of reinforcing strips arranged in the parallel sides of said spacer.

1,832,147. HEAT EXCHANGE DEVICE. Lawrence C. Soule, Essex Fells, N. J., assignor to Carrier Construction Co., Inc., Newark, N. J. Filed Nov. 8, 1929. Serial No. 405,769. 9 Claims. (Cl. 257—149.)

5. A heat exchange device comprising inlet and outlet headers, a plurality of coils each composed of spaced radiating tubes connected at their ends by hollow parts to form a continuous fluid passage, one of said coils being joined at its opposite ends to said headers at one side of each header and another of said coils being joined at its opposite ends to said headers at the opposite sides thereof, a protecting frame for said coils to which said headers are rigidly secured between the ends of the frame, said frame being open for the passage of air therethrough in a direction perpendicular to the planes of said coils, and means at opposite ends of said frame for supporting the radiating tubes adjacent their ends so that the tubes are retained in their relative arrangement but are free to expand and contract.

1,832,253. VAPORIZER FOR REFRIGERATING APPARATUS. Franklin G. Slagel, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y., a Corporation of New York. Filed Sept. 22, 1928. Serial No. 307,738. 5 Claims. (Cl. 62—8.)

1. A vaporizer comprising a vaporizing chamber, a liquid inlet valve having a casing provided with an inlet port, a movable valve closure for controlling said port, a vertically swinging lever having an upright arm connected with said valve closure and a horizontal arm, a float mounted on said horizontal arm, and a counterbalance weight mounted on the upright arm of said lever and projecting in a direction opposite to the float.



1,832,253

1,832,473. REFRIGERATING DEVICE. Aurin E. Payson and Miner P. Wetmore, Norwich, Conn. Filed Mar. 12, 1928. Serial No. 260,870. 10 Claims. (Cl. 62—91.5.)

1. A heat-insulated receptacle provided with a double-walled vacuum bottle for holding solidified carbon dioxide, said bottle being held in inverted position, and a previous closure for the lower end of said bottle to permit the escape of gaseous carbon dioxide gas downward into the receptacle where it expands and lowers the temperature.

1,832,710. HEAT INSULATING FILLER. Nobuo Ishida, Ebaragun, Tokyofu, Japan. Filed Jan. 4, 1928. Serial No. 244,564. 2 Claims. (Cl. 106—18.)

1. The method of making a filling plate for the space between the walls of a refrigerator, consisting of mixing equal volumes of cotton waste and waste wool and paraffin, boiling down the mixture to fill the capillaries of the fibrous material with paraffin and to render the mixture a plastic mass of proper consistency and when cooled forming the mass into a plate of the size and shape to completely fill the said space.

1,832,778. PRECOOLER FOR FABRIC COOLERS. Alpheus O. Hurxthal, Philadelphia, Pa., assignor to Proctor & Schwartz, Inc., Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 28, 1927. Serial No. 209,157. 4 Claims. (Cl. 62—139.)

1. The combination of a chamber having a series of transverse pipes at its upper end, said pipes being perforated to allow water to escape; a blanket in and extending longitudinally of said chamber and suspended from the pipes in a series of loops so as to form a series of passages for a current of air passing transversely through the chamber and across the blanket; and power-actuated means for causing the air to pass through said passages, transversely of said blanket.

(Concluded in Next Issue)

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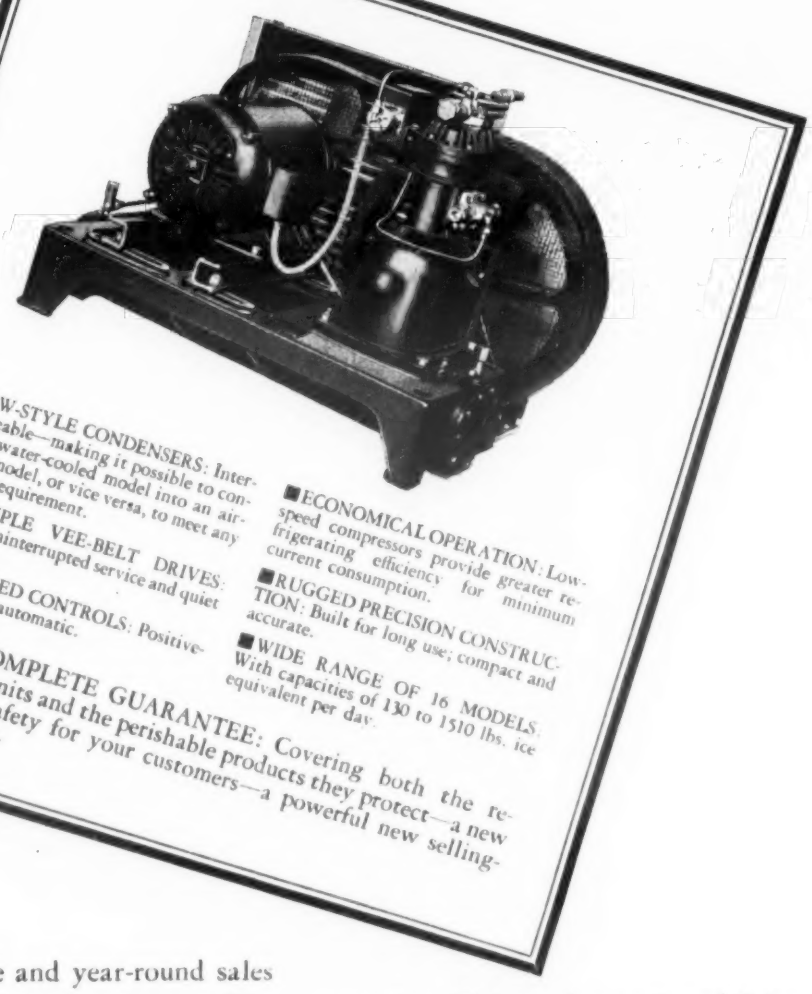
■NEW-STYLE CONDENSERS: Interchangeable—making it possible to convert a water-cooled model into an air-cooled model, or vice versa, to meet any service requirement.
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SERVEL

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ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

Published Every Week by

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What Business Men Want to Know About Refrigeration

ONE of the features of the 1932 REFRIGERATION DIRECTORY will be a "statistical section" in wnich will be included all available facts and figures regarding the production and sales of refrigeration equipment and the potential market for such products. The words "all available" are used advisedly since statistics on the refrigeration industry are a rather scarce article compared with the fund of information regularly published regarding some other lines of business.

The expense of publishing the DIRECTORY will be considerable. The collection and compilation of data from all known manufacturers of refrigeration equipment, parts, supplies, materials and accessories will run into many thousands of dollars. Whether or not the revenue from advertising and the sale of copies will equal the cost, we are already committed to the expense. We are making every effort to provide a valuable service to the industry.

Self-defense

To some extent, the DIRECTORY is being published as a measure of self-defense. The correspondence which comes into our office containing inquiries about sources of supply for all kinds of products, together with the increasing number of requests for statistical information, has become almost appalling in proportions. A few days study of our incoming mail would convince anyone of the *need* for this service.

We invite these inquiries, and we make every effort to answer them intelligently, because a business publication is founded on the idea of informational service, and it is our aim to fulfill that function to the fullest extent in this industry.

Reciprocity

The obvious fact remains, however, that we cannot furnish complete and reliable information unless that information is obtainable. And we are frequently impressed by the incongruity of a situation wherein we find that some of the concerns most anxious to receive facts and figures showing the operations of the *entire* industry are, themselves, unwilling to furnish the component parts of the total which must come from their own records.

Knowing the industry as we do, we are sympathetic with the viewpoint of executives who have learned from experience the necessity of guarding their business affairs from the destructive tendencies of competitors. We are well aware that many men consider it smart business to seize upon every bit of information which may be used to show the weakness of a competitor. While there is always a question in our mind as to whether it *really is* smart business, we accept the situation as it is and recognize its effect on every consideration of statistical activity.

At a recent meeting attended by executives representing leading manufacturers of refrigeration equipment, we presented a plan for gathering statistical information concerning the business of distributors and dealers to supplement that being collected from manufacturers through the Association headquarters. Mention was made of the many requests for information coming from a variety of business concerns interested in one way or another in the activities of the refrigeration industry.

Questions of Executives

That some of the executives of the largest manufacturers of refrigeration equipment do not take such questions for granted was indicated by questions of their own such as:

"Whose business is it, except ours?"

"What do they want to know?"

"Who wants to know?"

No doubt these same questions will occur to others who are called upon to give information about their business and we are, therefore, printing on this and an adjoining page, a group of representative letters received recently. Among them are letters from manufacturers of complete refrigeration systems, manufacturers of parts and supplies, manufacturers' agents, engineers, national magazines, associations and advertising agencies.

In some instances we have had reason to believe that the origin of the inquiry was in the office of an executive best able to supply an important part of the data desired. Or, if he did not actually ask the question, it resulted from the efforts of his subordinates to furnish him with an adequate picture of the industry or its market.

Misleading Data

Our observations cause us to suspect that the executives of large manufacturing organizations may sometimes be misled by the data on which they base important decisions. First, they are inclined to underrate the operations of the numerous small competitors whose activities seldom appear in the reports of their field organizations. They usually know what their principal competitors are doing as a result of the daily struggle for big orders and contracts. Another reason is that the figures furnished by service organizations specializing in research, advertising, finance, etc., usually present their findings in imposing tabulations and official-looking bindings. The feeling that they have all of the information that they need to guide their own business makes them somewhat patronizing toward the outsiders in search of knowledge.

Small manufacturers, on the other hand, frequently hesitate to contribute to fact-finding surveys because of an inferiority complex. They dislike the idea of placing their figures alongside those of larger concerns, even though the data will be used only for an adding machine operation to get totals for the entire industry.

Price Comparisons

One of the most frequently-repeated requests to be received lately is for a tabulation showing the retail prices for all makes and models of electric refrigerators now on the market. New companies, just coming into the field, especially want this information.

One of the difficulties, from our viewpoint, of publishing such a tabulation is the variation in retail prices in various parts of the country. In fact, some of the manufacturers do not set a retail price at all, leaving the figure to the discretion of the dealer.

It is also an open secret that the best advertised retail prices often do not mean much. F. O. B. prices are advertised widely, following the practice of the automobile industry, to which the dealer is expected to add a sizeable amount for freight, cartage, installation and anything else he can think of to justify the real price. Other prices, intended to be entirely legitimate, are forgotten by the dealer in the heat of competition.

Intelligent Competition

This particular type of request brings up the thought that *intelligent* competition will probably be better than ignorant competition under any circumstances. There are a lot of arguments in favor of giving the new company complete information just to make him a better competitor, if nothing else.

The letters published in adjoining columns are submitted in order to give all concerned a clearer picture of the demand for statistical data. Being in the publishing business we have a favorable attitude toward those who want information. We believe in information. We believe in statistics. We believe in education. We have the facilities and we are willing to do the job. We submit the proposition that the best interests of the entire industry will be served by *getting the facts* and *making them known.*

F. M. COCKRELL

Requests for Statistics

From Refrigeration Manufacturers

New Orleans Market

Mr. T—— G——, commissioner of public markets, is desirous of securing certain information relative to proportion of cases manufactured for mechanical refrigeration as against the proportion manufactured for ice refrigeration, and we believe that you are in better position to furnish this information than any other source.

In furnishing the above information, it must be taken into consideration that walk-in coolers can be used for either type, therefore your figures would, of necessity, have to be based upon display counters, cases, etc. You undoubtedly know there is a big rehabilitation program under way covering New Orleans markets.

Number of Makers

Please wire your best approximate number of manufacturers of household refrigerating equipment also number of manufacturers of commercial refrigerating equipment.

1931 Figures

In our hour of need we turn to the all wisest. Could you possibly wave your wand like the Electrolux magician and produce for your humble subscriber a series of figures?

What I would like is something consisting of an arrangement of Arabic numerals but so placed with relation one with another that they would indicate what the best minds consider will be the total volume of domestic refrigeration business this year in dollars and cents.

At the risk of making myself clear, what I am driving at is some idea of the total volume of sales during 1931, projected for the end of the year. I need this yesterday so your paper will be marked for both "accuracy" and speed.

Canadian Statistics

Inasmuch as we have anticipated consideration of the manufacture of refrigerators in Canada, we would be pleased if you could mail to us at your very earliest convenience the statistics on the sale of both domestic and commercial refrigeration throughout Canada over the past 12 months.

We would like to have this information to help us in our decision.

Any information that you can give to us in this connection will be greatly appreciated.

Sales School

The writer is preparing a talk on the progress of the refrigeration industry which is to form part of the class work at our commercial refrigeration school which is to be held at the factory commencing Jan. 19.

In this talk I wish to present a few figures which will illustrate the growth of the industry so as to point out the possibilities which exist in this business. The material I have on hand covers production and development up to 1928 and, of course, I would very much like to show figures covering the industry for 1929 and 1930.

Any information that you can send me on these lines will be greatly appreciated.

Total Sales Volume

We recently asked you for an estimate of the total domestic refrigeration sales for 1931. This information you kindly gave us.

We were making some comparison with previous years and some question has arisen as to the exact figures for 1929 and 1930. Could you tell us what the total domestic refrigeration volume was for these two years?

We shall appreciate very much having this information from you.

Prices, Specifications

We have been requested by several of our distributors, who are interested in the distribution of electric refrigerators, to secure the names, prices, specifications and all data possible on each of the manufacturers in the refrigeration field.

Does your paper carry this sort of information or do you have a list showing all of this data? We will appreciate it very much if you will send us a sample copy of your publication or any data you have on the list of active manufacturers to date.

Will you be so kind as to forward the same information and data on to our president, Mr. F——, addressed to his personal attention and address our copy to Mr. S——.

Comparative Data

I have just received your letter of Oct. 23 regarding the comparative data on all makes of electric refrigerators on the market to date. I am very sorry to learn that you do not have these comparative tabulations there in your office due to the fact that I was very desirous of receiving this information for our files as promptly as possible. I understand that all manufacturers of electric refrigerators will furnish this data to a refrigeration magazine or paper if they will request same; in fact, I have before me a sheet from the F—— Corp. giving all specifications, sizes, prices, etc., on their complete line of boxes.

I would like very much to receive this information, but, of course, our being in the refrigerator business and being a competitor, naturally the other refrigerator manufacturers would not send me this information as readily as they would to you, and if it is not too much trouble, I would like to ask a special favor of you, if you would be so kind as to write to the various electric refrigerator companies and request their specification sheets on their entire line.

If this is not convenient for you to do, I ask that you do not hesitate one moment in telling me that you cannot extend this type of cooperation. However, as stated above, I would like very much to receive this information.

From Manufacturers' Agent

Number in Use

Can you give us the following information?

How many household electric refrigerators are in use? How many old style ice household refrigerators are in use?

If you can let us have this information please get it to us as quickly as possible.

From Foreign Manufacturers

On Prices

We desire to communicate with and to obtain prices from manufacturers of electric refrigerating equipment for household use.

We are interested in the equipment only and without cabinets, or woodwork.

You will confer a favor for bringing our desire before those who may be interested, and we thank you.

From a National Magazine

Income Groups

We should very much like to have some information as to the proportion of the total annual volume of electrical refrigerators, which falls in the various income groups. We have special reference to people of various income classes buying refrigerators through acceptance groups.

We would thank you very much for any information regarding the above.

From Distributors

Comparisons

Would like to know where we can get a printed list of the comparative capacities, sizes, prices, etc., of the different electric refrigerators that are on the market now. No doubt, you have this made up in your different data, and would appreciate knowing how we can get a copy?

Would also like to know what your subscription prices are, as we are going to distribute an electric refrigerator, and would like to be kept up to date on developments in the business.

Ice Companies

Kindly arrange to forward to us, immediately, a list of ice companies who are also dealing in electric refrigeration.

The U—— Ice & Coal Co. is undecided as to whether or not ice and mechanical refrigeration can be sold by the same company, lucratively.

We would also appreciate any other information or data pertinent to the above, which you can furnish.

Total 1930 Sales

We wonder if you have any informa-

(Concluded on Page 11, Column 1)

Requests for Refrigeration Statistics

(Concluded from Page 10, Column 4)

tion available as to the total production and total sales of household electric refrigerators made in the year 1930, and if possible, we should also like to know what percentage of this total were built and sold by the General Electric Co.

Thanking you for any trouble you may take in letting us have this information.

From An Association

If it possible for you to furnish us with figures showing the sales of electric refrigerators for the first six months of this year, compared with the same period of last year?

If these figures are available at this time I will thank you to please send them to me.

Assuring you that I will appreciate your cooperation in the matter.

From Advertising Agencies

This Questionnaire Is a Sample of the Type We Get

We are enclosing a questionnaire on the subject of domestic electric refrigeration.

We presume you will have most of the information requested in your files and will appreciate your giving us whatever is available.

Any other information you may have pertinent to the distribution, merchandising, and sale of electric refrigerators will be most sincerely appreciated.

1. How many electrically wired homes are there in the United States?
   (a) How are they divided by:
   Cities of over 500,000 population?
   Cities of 100,000 to 500,000 population?
   Cities of 25,000 to 100,000 population?
   Cities of 10,000 to 25,000 population?
   Cities of 2,500 to 10,000 population?
   Under 2,500 population?
2. What have been the total sales of domestic electric refrigerators in the past 10 years?
3. How would you break down the sales of domestic electric refrigerators into population groups by percentages?
   Over 500,000?
   100,000 to 500,000?
   25,000 to 100,000?
   10,000 to 25,000?
   2,500 to 10,000?
   Under 2,500?
4. Do you anticipate any change in these percentages in 1932?
   (a) Where will they occur, and why?
5. How would you break down the sales of domestic electric refrigeration into income groups by percentages?
   Over $5,000?
   $3,000 to $5,000?
   $2,000 to $3,000?
   Under $2,000?
6. Do you anticipate any change in these percentages in 1932?
   (a) Where will they occur, and why?
7. How would you break down the sales of domestic electric refrigeration by retail outlets by percentages?
   Electric refrigeration dealers?
   Radio dealers?
   Department stores?
   Furniture stores?
   Central stations?
   General appliance stores?
   Others?
8. Do you anticipate any change in these percentages in 1932?
   (a) Where will they occur, and why?
9. How would you break down the sales of domestic electric refrigeration into price groups by percentages?
   Over $350?
   $250 to $350?
   $150 to $250?
   Under $150?
10. Do you anticipate any change in these percentages in 1932?
    (a) Where will they occur, and why?

Another Questionnaire

In the interest of one of our clients, we are directing this letter to you, asking for information which we believe you can supply.

No. 1. How many refrigeration distributors are there in the United States?

No. 2. To what extent do these distributors conduct wholesale business? (We are familiar with the nature of the business conducted by organizations such as R. Cooper, Jr., Co. of Chicago. While that organization is called a distributor, most of their business is in sales direct to the users of refrigeration. We are trying to locate the extent of the wholesale business done by refrigeration dealers. What we have in mind as wholesale business is the sale of refrigerators by the distributor to its retailers.)

No. 3. To what extent do refrigerating distributors handle other commodities? (We have found a combination in certain cases of radio and refrigeration. Our question presently seeks to determine the extent of the business done by refrigeration distributors other than on refrigeration items.)

No. 4. What is the typical arrangement between the manufacturer and the refrigeration distributor with respect to territory and policy regarding his handling other lines?

(a) Do the manufacturers grant state rights, county sales rights, city?

(b) Are these distributors permitted to handle other lines?

We realize that we are asking you for quite a lot of information. Most of the information undoubtedly can be given without any research on your part. From the nature of our question, you can notice that we are examining the field carefully because we feel that there may be an opportunity to distribute other products through the refrigeration distributor.

Display Cases

A client of ours is interested in the possibilities of marketing a new refrigerated display case. We would appreciate it very much if you could assist us in securing the following information:

1. Names of companies already manufacturing this type of equipment.
2. Types of retailers who have already installed this equipment.
3. Estimate of the potential market for this type of equipment.
4. Price range of present equipment on the market.

In addition to the above we would appreciate any information you might have regarding the possibilities for a manufacturer in this field.

Break-down

We will appreciate receiving by return mail all the information you have regarding:

1. Sales of electric refrigerators by years in dollars volume?
2. Same in number of units?
3. Same by geographical areas?
4. Same by makes?

In case this data is not in your files, perhaps, you can advise where it may be obtained.

1930 Business

We are anxious to receive in behalf of a client as much information as you can quickly put together which will indicate to us the amount of business for the year of 1930 among the manufacturers of electric refrigerators.

If we could receive a list of the total sales of each of the leading manufacturers and the total amount of business throughout the industry for the year, it would indeed be very helpful in preparing plans which in the near future may be very interesting to you.

Any other facts and data which you think might be helpful in getting a clear prospective of the electric refrigerator field will be very greatly appreciated.

Metropolitan Market

To what extent can you help us in securing information about the metropolitan New York market for electric refrigerators? We want to know, with as much detail as possible, the kind of refrigerators most popularly sold, and in particular, the trend in apartment houses, both new and old.

Our client has been doing a very large business with the contractors and builders and with apartment house owners, and has in mind entering the New York market with a vigorous campaign. It is our belief that a certain size or type of cabinet is best adaptable to New York apartment conditio2s, and it is this item that we are anxious to check.

In general, we wish to give our client the bird's-eye-view of refrigeration activities in the New York market, and in addition to the apartment house installation interests, any information that you may gather covering general household refrigeration, number of installations, current prices and discounts and other pertinent facts will be of utmost value.

For 1932 our plans embrace active advertising in ELECTRIC REFRIGERATION NEWS, which media we have been using for several years in a small way. The information you give us will guide to a large extent the character of our work for the coming year.

Estimates

As you know, our client, the M——— Co., is advertising refrigeration controls in your publication.

At the present time we are preparing some statistical material in which we should like to include figures on your market, both domestic and commercial.

Please send us by return mail, special delivery, any figures which you may have at hand as to the total estimated market for both types of refrigerating equipment and also any forecasts which may have been arrived at regarding total sales of the industry in the respective branches during the next year or any other period for which an estimate has been made.

We realize that these statements may be, to a large extent, expressions of opinion but such expressions if made by competent people are entirely satisfac tory for our immediate purpose.

From Australia

Engineering Facts

I am pleased to see that you invite questions. I am giving you a few questions below concerning which we have never had very definite information and I would be glad if you would reply to them to the best of your ability.

1. What is the proportion in numbers and value between the output of household and commercial machines (not cabinets)?
2. What is the relative demand for compressors driven by 1-6, ¼, ⅓, ½, ¾, 1, and 1½ hp. motors?
3. What is the bore, stroke and speed of Frigidaire compressors? We have seen these specified in Kelvinator pamphlets but not in Frigidaire.
4. What Frigidaire air cooled compressor and ice making evaporator would be used for a six-door 35 cu. ft. cabinet with 2 in. of cork board insulation and
   (a) Two-hole ice cream cabinet?
   (b) Three-hole ice cream cabinet?
   (c) Four-hole ice cream cabinet?
5. What is the ice melting capacity required to successfully operate:
   (a) Two-hole ice cream cabinet?
   (b) Three-hole ice cream cabinet?
   (c) Four-hole ice cream cabinet?
   (d) Six-hole ice cream cabinet?
   (e) Eight-hole ice cream cabinet?
6. What is the best formula for determining the correct cooling equipment for any given room or box?
7. What is the correct formula for determining the ice melting capacities of compressors using sulphur dioxide operating under varying temperatures of the cooling medium?
8. What is the correct formula for determining the ice melting equivalent for evaporators and what is the meaning of the two figures given in Frigidaire literature for 40° and 45° refrigerators?
9. What is the largest butchers room for which sulphur dioxide machines are suitable?
10. What is the largest sulphur dioxide compressor in use as a commercial success?
11. What system is employed in the most up-to-date factories for drying out evaporators before charging?

We value your paper highly and look forward to receiving our regular copies We have recommended it to our agents and they are now subscribing.

From Engineers

Refrigerated Trucks

Have read your interesting paper often but have never been assured of its continued arrival at my desk—hence this subscription.

Are you compiling figures to show the growth of refrigeration as applied to trucks? It seems to me that this development should employ a great deal of your attention right now—because it is the next big development in refrigeration. I have spent the last two years studying it and have prepared a program of standardized body models which I believe are far in advance of the present market.

I know your interest is in the mechanical refrigeration development but I am in need of some figures for some coming conferences with large body manufacturers in Detroit and if you have anything available will surely appreciate receiving it because I am sure they will be accurate.

I am interested in the following figures:

1. Approximate number of units (truck) in service in 1928-'29-'30. These to show by classifications:
   Ice and salt; cartridge (Waltham, Kold-can); mechanical; solid CO_2.
2. Value of this same equipment.

I have some figures along this line but would like to use yours for checking purposes.

From Suppliers of Parts, Materials

Retail Outlets

We would appreciate it very much if you could give us any statistical data on the following questions:

1. The approximate number of public utility companies merchandising electrical refrigerators?
2. The approximate number of independent dealers merchandising electrical refrigerators?
3. The approximate volume of sales in dollars on electrical refrigerators sold through public utility companies.
4. The approximate volume of sales in dollars on electrical refrigerators sold through independent dealers.
5. The approximate number of absorption domestic units such as Electrolux sold in 1930.

We will be very grateful to have any statistics you can give us on these points.

Geographical Sales

In your issue of Feb. 18 of this year, you published an interesting graph showing the graph of the electric refrigeration industry, and this graph showed the probable production of the different sizes of machines for the year 1931. Is there any more recent information available as to what actual sales in the first three-quarters of 1931 have been?

Can you tell me where we can get any data as to the approximate distribution of sales of household refrigeration machines in different parts of this country, either by states or by larger sections?

Assuring you that I shall greatly appreciate any information that is available in this line.

Sales in 1930, 1931

Mr. B———, vice president in our organization, asked me to drop you a note to find out whether you could tell us how many electric refrigerations were sold during last year and this year.

Any information you can give us along this line, we assure you will be very much appreciated, and will be reciprocated at our earliest possible opportunity. We shall await your reply.

Break-down by Makes

In connection with a research which we are now getting under way, we should appreciate your informing us, if you will, of the sale of electric refrigerators for the year 1930 and the first 10 months of 1931.

If possible, we should like to obtain these figures broken down by the names of the various manufacturers.

Any cooperation you may offer us will, indeed, be greatly appreciated.

Commercial Market

Can you give me any information as to the total number of electric refrigerating units sold annually for display cases either for frozen foods or for chilled foods, also the number of units sold annually for ice cream cabinets?

If you are unable to give me these figures can you tell me the number of display cases sold each year, whether refrigerated or not, and the number of ice cream cabinets sold?

We have a device that we propose to market for use of display cases and ice cream cabinets that will require considerable advertising and we wish to know something about the potential market before proceeding with our plans.

From A Manufacturer

Regular Statistics

We should like to obtain information on the latest statistics on electric refrigerators that is, the number sold per year of commercial and domestic units, together with an estimation of the number sold in each division.

We would also like to secure similar information on gas refrigerators, if that is available.

If you are not in a position to let us have these details perhaps you will be kind enough to advise us who may be able to give us these details. If there is any statistic which is published regularly concerning this, we would like to know what it is.

GAS CO. ISSUES CHISTMAS GIFT CIRCULAR

LOS ANGELES, Calif.—A four-color illustrated circular on gas appliances as a holiday gift suggestion has been mailed to customers of the Southern California Gas Co.

More than 220,000 of these enclosures were distributed with the last company statements.

The circular bears the title, "Christmas gifts that bring year 'round satisfaction," and features five different gas-burning appliances including the Electrolux refrigerator.

GHOLSON JOINS FIELD SALES FORCE OF SERVEL DEALER

POPULAR BLUFF, Mo.—E. Gholson has joined the firm of Walker Motor Co., Servel Hermetic dealer in this city, as a territory salesman.

FRIGIDAIRE SALES CO. EXCEEDS QUOTA 24%

CINCINNATI, Ohio—The Cincinnati Frigidaire sales organization, newly reorganized under the direction of H. H. Kennedy, manager of Frigidaire's Central sales region, exceeded its November sales quota by 24 per cent, Frigidaire officials announce.

The Cincinnati organization now consists of a network of dealers, with a district office established in the Cincinnati Terminal Warehouse. F. M. Davison, former sales manager for A. H. Thompson & Co., Louisville, is in charge of this office. No retail business is handled by this office.

Leading downtown dealer is the Brown-Twenhofel Co.; all commercial activity is being conducted by E. F. Gutham, 342 Reading Rd.

Other dealers in the city include L. L. Redman, 3740 Glenmore Ave.; Paul L. Barth, 3629 Warsaw Ave.; Carlson Refrigeration & Radio Shop, 116 South Wayne St., Lockland; F. J. Detzel and C. B. Goldsberry, operating the Northside-Clifton Refrigeration Co., serving the northern suburbs; C. C. Walter, covering Hyde Park, East Walnut Hills, Oakley, Evanston, Madisonville; the Norwood Gas & Electric Co., Norwood, Ohio; and the Gas & Electric Appliance Co., handling showroom sales and showroom leads only.

McAlpin's, a department store, is associated with the downtown dealer, Brown & Twenhofel Co.

NORGE DISTRIBUTORS USE DEMONSTRATION ROLLATOR

DETROIT — Trilling & Montague, Philadelphia distributor for Norge refrigerators, has supplied 75 per cent of its dealers with demonstration rollators, according to John H. Knapp, Norge vice president in charge of sales.

In metropolitan St. Louis, under the leadership of Distributor E. E. McMillen, 71.9 per cent of all Norge dealers are using it.

"Our sales totals," says Mr. Knapp, "show one cutaway rollator in the field to every 37.7 actual sales. This tells the story."

In manufacturing, some compressors do not come up to measurement or volumetric efficiency standard (the latter of at least 90 per cent).

These sub-standard machines, instead of being rebuilt and installed in boxes, have a quarter section of the outer shell cut away, exposing the operating roller. These are shipped out to dealers.

Instead of placing a complete Norge refrigerator in the prospect's home, the salesman sells by picture-portfolio and other sales tools. Then when the time comes for demonstration of operation, he gets out the "cutaway rollator."

CALIFORNIA HOUSEWIVES STUDY PROPER NUTRITION

YREKA, Calif.—The Yreka Women's Club, Parent-Teachers Association, and the American Legion Auxiliary cooperated recently with the local newspaper, *Siskiyou News*, and the Broadway Theatre for a gas cooking school. The Natural Gas Corp. of California sponsored the school.

Proper nutrition for school children was discussed the first day, with the Electrolux refrigerator being used by Miss Elner Martin, home economist for the Natural Gas Corp., to show how it simplified the preparation of healthful food.

Holiday entertaining was the feature of the second day, and here again the Electrolux was used. The third day was devoted to the proper cooking of meats, and the use of an Electrolux for food preservation was brought out by Miss Martin.

Various local merchants also participated in making the school a success, with a total of 194 in attendance the final days. Musical numbers and a style show were contributed by the various organizations.

J. B. Knaack gave a talk comparing the ways of cooking in Russia with those in use in the United States as one feature.

REFRIGERATION DEPARTMENT MANAGER NAMED

BIRMINGHAM, Ala.—The refrigeration department of Loveman, Joseph & Loeb is now under the management of Edgar P. Holstein. The department store has moved the refrigeration section to the fourth floor, in combination with the radio section.

LYRIC RADIO DEALER NAMED ASSOCIATION PRESIDENT

MINNEAPOLIS—R. A. Cooley, head of the radio department of the W. S. Nott Co., was elected president of the Northwest Radio Trade Association at the annual meeting recently. The W. S. Nott Co. distributes Lyric radios and Mohawk electric refrigerators.

LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

No Whopper

Last week there came across our desk a piece of copy which made us look twice, whistle, and mumble, "Whoa, there!" It read something like this:

"An electric refrigerator sales job without a parallel in the world has been accomplished in Boulder City, Nevada.

"Ninety per cent of the homes in this little town are equipped with electric refrigerators and of these electric refrigerators, 97 per cent are General Electrics, all of which were installed by the Boulder City Co., dealer for the Frank Edwards Co., distributor of General Electric refrigerators in Salt Lake City, Utah."

The story came from the electric refrigeration department of the General Electric Co. in Cleveland, and although we had no reason to doubt its authenticity, we made a note to check up with Fred Bollmeyer and George Straight over there to see if the G. E. boys were not dusting off a few choice whoppers for us.

Before we could get in touch with Cleveland on the matter, George Straight called us up on the telephone. George is editor of "On the Top," the G. E. house organ.

"Say," says George. "Did you get that hot story about the saturation in Boulder City, Nevada?"

"Yup," we answer. "We got it. What do you want us to do with it?"

"Print it," shouts George. "It's one of the biggest stories of the year. But wait. I've got some more dope on it, and will shoot it right over to you."

* * *

Straight Goods

Sure enough, George's story was straight goods.

Boulder City has sprung up at the site of Boulder Dam while you and I were sleeping.

On a spot where six months ago there was nothing but the sort of landscape Zane Grey loves to describe in florid sentences, there is now a settlement of some 300 families.

The figures quoted in the second paragraph of this kolyum are approximately correct. Go back and read 'em again. And beat 'em if you can.

Two men are largely responsible for this remarkable sales record.

One is V. G. Evans, merchandising manager of the Boulder City Co. The other is J. F. Schmeiskors, sales engineer.

The latter was taken on by the Boulder City Co. with the personal recommendation of Frank Edwards, G. E. distributor in Salt Lake City.

An example of the type of merchandising done by these two men is a statement from Frank Edwards that within the past 30 days there have been shipped to Boulder City two and one-half car loads of "monitor tops."

Sales engineer Schmeiskors performed one of the most outstanding sales jobs in Refrigerania during the recent G. E. election campaign, when he sold in this 10-week period 122 General Electric refrigerators.

In addition to the sales to individuals, another order for 30 SS-62's has just been placed by the government and these refrigerators are being shipped immediately.

* * *

Heavyweight Contender

Few places provide worse conditions for electric refrigerators than are prevalent in the Boulder City vicinity.

In this part of the country the temperature in late summer runs around 115° F., and in midsummer around 143° F.

The Boulder City company's principal work is to provide comfortable and pleasant environment for the inhabitants of this mushroom town, and keep the hundreds of workmen employed on the huge Hoover Dam contented.

This work is directed by Mr. Evans and the Six Companies, Inc., a group of six contracting concerns working on this huge project, which will probably be finished in six or seven years.

As part of his work Mr. Evans has had a club house built, and has engaged the services of Frank Moran, former contender for the heavyweight boxing crown, as personnel director.

In the club house one can always find many kegs of near-beer, which are kept in a specially constructed General Electric cabinet equipped with a DR-5 and DR-4 unit.

In addition a G-75 is used for precooling steins in which the frothing liquid is served.

In offices and dormitories there are water coolers, and in the grocery department of the commissary a CD-602 has been installed to protect perishable food stuffs.

The Boulder City Co. contemplates building some 600 homes in this city, which already has paved streets, street lighting and other modern conveniences.

Now before you move on to the next tale, take a look at Mr. Schmeiskors, whose desk and countenance appear on this page. Wattaman!

* * *

Ninety-Seven Per Cent

J. F. Schmeiskors, sales engineer for the Boulder City Co., has helped equip a mushroom Nevada town with enough G. E. refrigerators to make the saturation point 90% and the percentage of G. E.'s 97%.

Publicity Men and House Organ Editors

Speaking of George Straight reminds us that there is a flock of interesting men whose names have never appeared in this kolyum.

They are the publicity men and the house organ editors (often one and the same) who help and complement the work of ELECTRIC REFRIGERATION NEWS in keeping members of the refrigeration industry informed on the latest happenings and ideas pertinent to their interests.

George Straight, editor of *On the Top*, is a young University of Michigan graduate who has seen service on more than one Ohio newspaper.

He is tall, slim, wears owlish glasses, has the faculty of steady concentration, and writes fluently.

Liaison man between the General Electric refrigeration department and Maxon, Inc., the advertising agency which handles the G. E. account, is Fred Bollmeyer. He's the head publicity man for G. E. refrigerators, reporting directly to Walter Daily, advertising and sales promotion manager.

Fred, descendant of a line of newspaper men, is a well-groomed, personable fellow with sound ideas about publicity and how to get it.

So well was he liked by the G. E. executives in Cleveland that when their account was switched from another agency to Maxon, it was stipulated that Bollmeyer was to go along with the account. He did.

Frigid Era

A distinguished house organ is *Frigid Era*.

Conventional magazine size, employing rather unconventional sans-serif headline type (of the variety made popular by the Conde Nast publications), replete with pictures, extraordinarily well written, this publication for Frigidaire men will compare favorably with any periodical of similar type in the country. Thus saith the Valve.

Helping C. T. Mutchner, Frigidaire publicity director, get this paper out are three young men whose names are Chryst, Saylor, and Tobin.

This trio does considerable travelling to gather material for the paper. All can write and write well. All have had newspaper experience.

Formerly city editor of a Dayton daily newspaper, and seasoned in newspaper offices in Indianapolis and elsewhere, C. T. Mutchner knows the why and the wherefore of good writing and editing.

Editing "Frigid Era," however, is but a small part of his job.

It is his business to see that news "handouts" find their way to other publications.

He is something of an official greeter and an entertainer. Takes a variety of talents and propensities to hold down that job.

* * *

George Cullen and Cold Facts

Cold Facts is the name of the Kelvinator house organ. It is also conventional magazine size, also newsy and well illustrated, and also well written.

One of the interesting facts about this publication is that it is practically a one-man job. George Cullen is the Kelvinator publicity department.

Cullen has, however, two helpers—one at his right hand and one in an office about two long-legged steps up the aisle from George's.

In this office up the aisle sits A. M. Taylor, director of advertising. Mr. Taylor furnishes the guiding hand and many of the ideas.

At George's right hand is Corinne (she probably has a last name, but it seems to have atrophied).

Corinne is a red-headed gal, and in addition to being an efficient secretary, she usually has a feminine wile or two to make visitors glad they came.

And since part of a publicity man's job is to make certain people happy and kindly disposed toward his offerings, Corinne is an aid.

Veteran newspaperman, George Cullen combines experience with the fire and steam of a man 15 years younger. He is passionately loyal to his organization and co-workers, and labors like a Trojan to keep his gross or two of publicity irons in the blaze.

One of the finest pieces of simple, eloquent writing it has ever been this humble writer's privilege to read was Cullen's report in "Cold Facts" of the presentation of a birthday cake to President George Mason of Kelvinator last fall.

* * *

Rorison, Lance, Jones

A man who makes his job a profession is W. A. Rorison, editor of *Electrolux Refrigerator News*, and assistant to Hank Boyle, Electrolux sales promotion manager.

Bill gets out a good paper.

It's a newsmagazine, devoted almost entirely to doings of Electrolux organizations afield.

News about activities of the home office (New York City and Evansville) or headquarters men rarely find its way into the columns of this sheet. There's a reason.

His experience has been almost entirely in the house organ field, and he looks upon the business of editing a publication of this type as a high calling.

He is quite young, small and wiry, tense and alert, and as conscientious as chaperones were said to be in the days when the elder generation was trying to have its fling.

Also published in Evansville is the *Servel Refrigerograms*. Editors of this paper are Paul Jones, advertising and sales promotion manager of Servel Sales, Inc., and O. B. Lance, his assistant.

Lance, who stays at home, handles incoming stories and pictures.

Jones, who travels extensively, brings back fresh news from the field. Paul does much of his work on this paper while riding on trains.

* * *

More Publicity Men

Under the direction of hard-working Ralph M. Douglass, Copeland's advertising manager, works Jim Beckman, Copeland publicity man.

Jim, a tall, intense, nervous, voluble fellow, has had remarkable success in getting his stories printed by newspapers this year, according to Douglass.

M. W. Thompson, suave assistant director of advertising for the Grigsby-Grunow Co., is the Majestic publicity man.

A bachelor who spends his surplus time in turning out more work rather than in riotous living, Thompson has survived many changes in the Grigsby-Grunow organization, and is rather generally given the credit for having handled the bulk of the Majestic advertising job during the last few years.

He had his schooling at the University of Illinois, and before coming to Grigsby-Grunow was technical editor of a radio magazine.

W. S. Legler is the bright young man who helps clever William M. Myers, merchandising manager of Trupar, edit the Mayflower house organ.

Various members of the Horace Lytle advertising agency of Dayton also contribute to the Mayflower publicity program.

If Myers were not needed for so many other more important duties, he could probably turn out stories which would make humor-loving readers believe that he was the fellow who did ghost writing for Mark Twain.

Williams Ice-O-Matic publicity is supplied by Don Frank, advertising manager, and John M. Cullinan, editor of the Williams *News-O-Matic*.

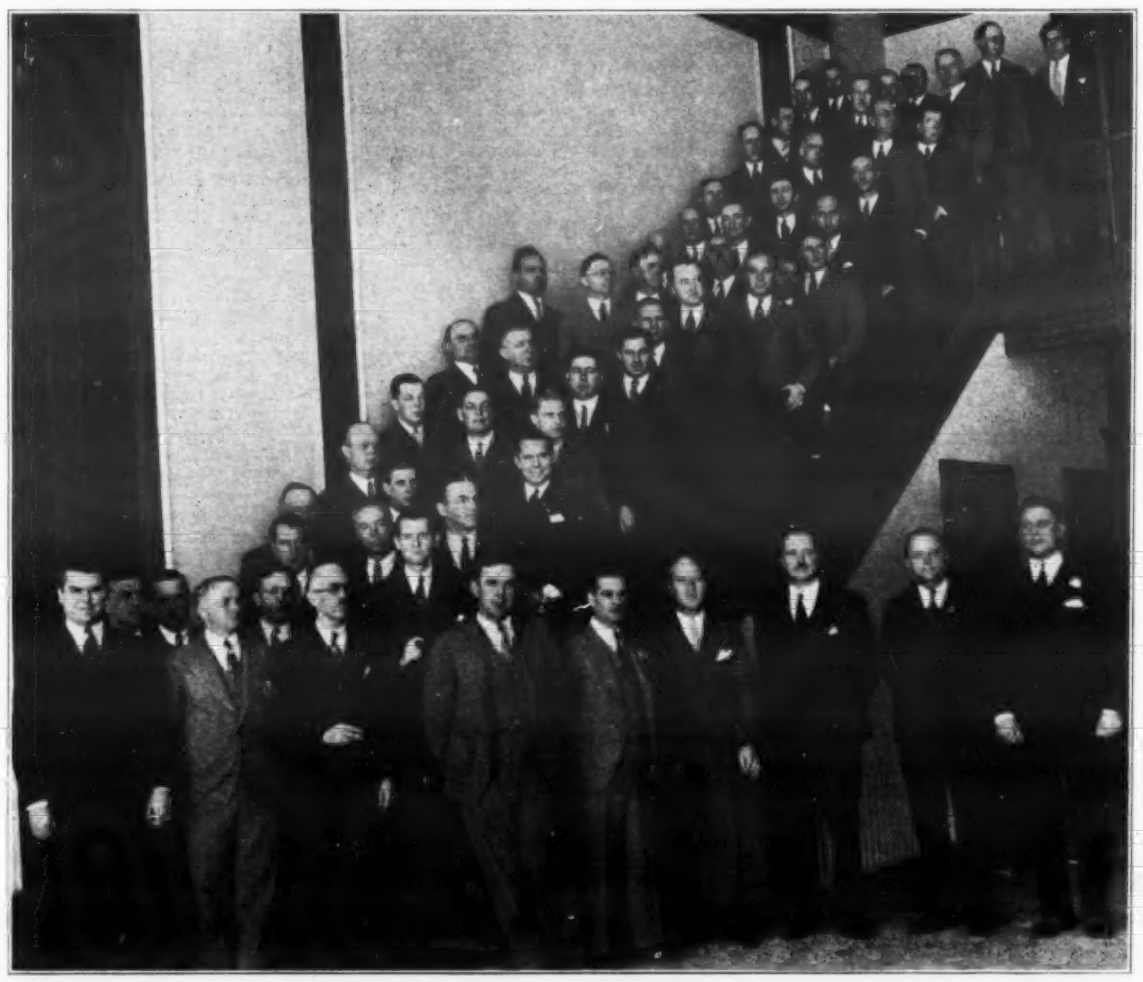
Cullinan, who worked his way into his position from a machine-tending job in the Williams factory, is also an author of parts.

Writing under the pseudonym of the "Sagebrush Sage," Cullinan has published a small volume, "Sage Brush Sayin's," which presents homespun prairie philosophy in the language of the cattle country.

Sample paragraph:

"There seems to be a machine fer everything. But they haven't invented one yet that kin drink the stuff they mix. There ain't no machine that kin stand up under it like this carcass o' ours. The human body is a wonderful thing."

The Descent of Man



Officers and salesmen of the recently organized firm of Wetmore-Scott, Boston Westinghouse distributor, attended a meeting in the new sales headquarters and posed for the photographer in this fashion.

Are You Going after More Business in 1932?

THE 1932 REFRIGERATION DIRECTORY is a logical, practical advertising medium for every manufacturer of refrigeration equipment and for every manufacturer, large or small, who sells supplies or service to this great industry because:

1. The DIRECTORY will be the recognized industry register of all trade-marked refrigeration products.

2. It will be the buyers' guide for engineering, production, and purchasing executives.

3. It will be the handbook for all the suppliers who serve the industry.

4. It will be the encyclopedia of information for present and prospective distributors and dealers.

To Manufacturers of Refrigeration Systems

As a manufacturer of refrigeration systems—household, commercial or industrial—you should use display space in the DIRECTORY because:

1. It offers you an effective means of securing new dealers; especially successful sales outlets that are actively interested in a distributorship or dealership. No matter where these potential dealers start making their inquiries about the right products to handle, they are almost sure to be referred to the DIRECTORY.

2. The DIRECTORY will be certainly used by good dealers who, for one reason or another, are dissatisfied with their present connections.

3. Your advertisement will be referred to by the great number of dealers who, with incomplete lines, are buyers of additional equipment, special sizes, designs and applications.

4. Your advertisement will be seen both by service departments of dealers and by independent service stations, who are large buyers of parts and supplies for repair and maintenance work.

5. You can also use the DIRECTORY to reach important export markets. (The DIRECTORY'S foreign circulation, for instance, will include distribution to every American consular office.)

6. Your DIRECTORY advertisement will reach many unidentified prospects, both dealers and consumers throughout the year. (The DIRECTORY, for example, will be furnished free to the reference rooms of public libraries in all cities of 50,000 population or more.)

7. In addition, the DIRECTORY offers you an ideal means of supplementing your timely advertisements in ELECTRIC REFRIGERATION NEWS and REFRIGERATED FOOD NEWS with a specific announcement that will be current throughout the year; particularly important is this feature in the case of irregular advertisers.

To Manufacturers of Cabinets Compressors and Cooling Units

As a manufacturer of cabinets, compressors or cooling units, you will find the use of display space in the DIRECTORY profitable because:

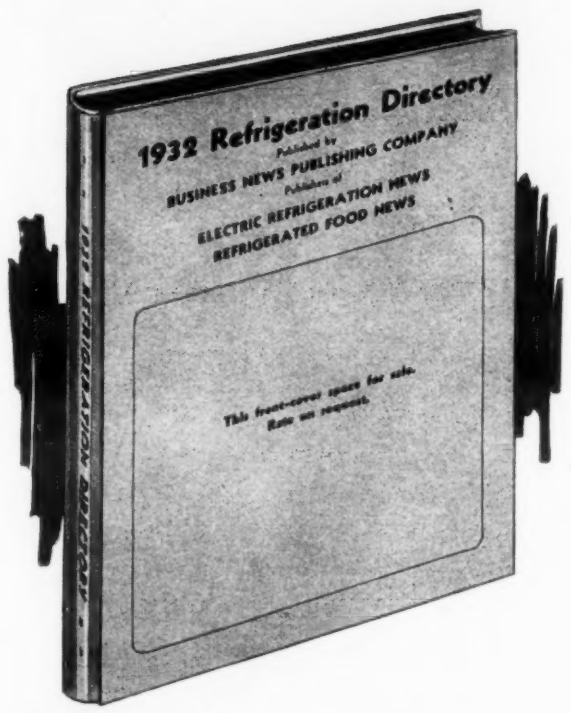
1. The DIRECTORY will reach active and potential buyers of these major parts of the complete refrigeration system—established manufacturers, as well as those who are planning to enter the field.

2. Your message will be seen by large distributing organizations and other concerns interested in private brands.

3. The DIRECTORY will be used by distributors and dealers who buy equipment for special installations.

4. The DIRECTORY will be a guide for dealers with service departments and for independent service stations.

5. Your advertisement will also reach the export market.



To Manufacturers of Parts, Materials and Supplies

If you are a manufacturer of parts, materials or supplies for the refrigeration industry, you will find the DIRECTORY made to order for your business announcement because:

1. In reaching established manufacturers and assemblers of refrigeration equipment, your advertisement will be seen by executives, engineers, production men and sales officials—all of whom are influential in setting up specifications, in placing orders.

2. Your advertisement will also reach distributors and dealers who sell the finished product and whose good will or favorable comments will be of great value to you in selling manufacturers and in keeping them sold.

3. Your message will put you in touch with distributors and dealers who are equipped to make multiple, remote, commercial and special applications of refrigeration.

4. Your DIRECTORY advertisement will also be referred to by dealers and service stations who are large users of parts, materials and supplies in handling repair and maintenance work.

To Manufacturers of Production Tools

As a manufacturer of production tools for the refrigeration industry, you can use display space in the DIRECTORY to advantage because:

1. The DIRECTORY will reach those executives who are constantly striving for better production methods, lower production costs.

2. Your message will be seen by production men who are always searching for more efficient equipment, for machines and tools that will speed up production and increase profits.

3. Your advertisement will also come to the attention of the new personnel in old companies and the personnel in new companies—buyers unfamiliar with the sources of supply.

To Manufacturers of Service Tools

As a manufacturer of service tools, you should insert an advertisement in the DIRECTORY because:

1. Your message will reach distributors and dealers who have established service departments and who are eager to adopt new methods and new tools that will improve their service, lower their costs.

2. You will appeal to independent service stations—to consistent buyers of service tools.

3. You will also reach new distributors and dealers before their service organizations are completely equipped.

To Manufacturers of Refrigeration Accessories and Other Related Merchandise

If you manufacture refrigeration accessories or some other related merchandise that can be handled by refrigeration dealers, you should tell the story of your products in the DIRECTORY because:

1. Refrigeration dealers are in an excellent position to carry new ideas about the preparation or preservation of food to the public.

2. Furthermore, dealers are beginning to recognize the importance of accessories in selling the advantages of modern refrigeration.

3. In home service work, cooking schools, exhibitions, accessories are needed to dramatize demonstrations.

4. You can use the DIRECTORY to impress upon dealers how your products fit into the scheme of selling, demonstrating or equipping modern refrigeration systems.

Manufacturers of Household Appliances and Other Companion Merchandise

If you are a manufacturer of household appliances or other products which may be sold as companion merchandise by refrigeration distributors and dealers, you will find it of distinct advantage to use space in the DIRECTORY because:

1. Your advertisement will reach aggressive specialty selling organizations that are now making outstanding records in merchandising electric refrigerators.

2. Refrigeration dealers are keenly interested in building up the valleys of their off-seasons by selling other products that fit in with their plan of doing business.

3. Refrigeration dealers have unusually attractive display rooms in prominent locations—desirable space for other products.

4. They are reputable merchants with experience in handling high-price merchandise.

5. Having established many satisfactory customer contacts, they are in a position to capitalize their customer relationships in merchandising other products.

To Other Manufacturers Who Have Something the Industry Can Use to Advantage

If you have something the industry—its great manufacturing plants, its engineering laboratories, its wholesale and retail sales organizations—can use to advantage, you should advertise in the DIRECTORY because:

1. The 1932 REFRIGERATION DIRECTORY will be the handbook of an industry that is known for its advanced merchandising, its progressive production and sales methods, its eagerness to keep out in front.

2. The DIRECTORY will represent an industry that is still young, still open-minded, still in the early stages of forming buying habits, still eagerly seeking new methods, new materials, new sources of supply.

1932 Directory Forms To Close January 12.

Final forms close January 12. Plan now to put your message before the influential executives and buyers of the industry. For your convenience, an order blank is enclosed. Use this form today to reserve the space you will want in this handy reference book.

BUSINESS NEWS PUBLISHING CO.
550 Maccabees Bldg. Detroit, Mich.

RADIO SETS IN HOMES TO TOTAL 14 MILLION

WASHINGTON, D. C.—At least 14,000,000 radio receiving sets will be in operation in the United States by Jan. 1, 1932, according to estimates based on the U. S. census bureau's recent compilation of radio sets owned in this country.

The census report as of April 1, 1930, gave a total of 12,563,737 sets at that time.

Final figures as of April 1, 1930, for all states except Illinois, New York, and Pennsylvania, appear in the report. Radio ownership in these states was carefully estimated and the figures were included in the report. The totals are as follows:

Alabama, 56,491; Arizona, 19,295; Arkansas, 40,248; California, 839,846; Colorado, 101,376; Connecticut, 213,821; Delaware, 27,183; District of Columbia, 67,880; Florida, 58,446; Georgia, 64,908; Idaho, 32,869; Illinois, 1,144,597; Indiana, 351,540; Iowa, 309,237; Kansas, 189,527; Kentucky, 111,452; Louisiana, 54,364; Maine, 77,803; Maryland, 156,465; Massachusetts, 590,105; Michigan, 599,196; Minnesota, 287,880.

Mississippi, 25,475; Missouri, 352,252; Montana, 43,809; Nebraska, 164,324; Nevada, 7,869; New Hampshire, 53,111; New Jersey, 625,639; New Mexico, 11,404; New York, 1,886,208; North Carolina, 72,329; North Dakota, 59,352; Ohio, 810,767; Oklahoma, 121,973; Oregon, 116,299.

Pennsylvania, 1,444,704; Rhode Island, 94,594; South Carolina, 28,007; South Dakota, 71,361; Tennessee, 86,229; Texas, 257,686; Utah, 47,729; Vermont, 39,913; Virginia, 96,569; Washington, 180,229; West Virginia, 87,469; Wisconsin, 364,425; Wyoming, 19,482; total for the United States, 12,563,737.

NEW HOMES IN LONG BEACH TO USE ELECTROLUX

LONG BEACH, Calif.—Salesmen of the McCrery Music Shoppe, Electrolux dealer in this city, estimate that during the last two months they have secured orders for Electrolux refrigerators from 25 per cent of the residences for which buildings permits have been issued.

MUNCIE, IND., SHOW

MUNCIE, Ind.—Electric refrigeration and radio dealers, here, held an electrical show as part of their Electric Refrigeration Week activity. The show, held in the Masonic temple, was sponsored by the Muncie *Star*.

District Managers Survey Gibson Float

P. W. Peck, Atlanta; George M. Farrin, Chicago; and H. G. Seldomridge, Chicago, district managers for Gibson electric refrigerators, besides float used in recent parade at Greenville, Mich.

ACTIVITY CENTERS AROUND BUREAU IN RICHMOND

RICHMOND, Ind.—Electric refrigeration here centers around the newly formed refrigeration division of the Electric League. One agreement made since the division's formation is to allow a maximum figure of $10 as the trade-in value of an old refrigerator.

Self-Contained Unit Used by Bird

CHICAGO—"Everyone his own refrigerator" is the slogan of the pelican flounder, which flounders about the waters of the Pacific Ocean near the Hawaiian Islands.

One of the number has just come to take its place in the Chicago Field Museum of Natural History, as an example to fishermen of the latest in up-to-date methods.

The pelican flounder carries his own dip-net, basket, and refrigeration system. By depressing a tough membrane that constitutes the floor of his mouth, he scoops up his food and can retain it there until needed.

CONVERTER NEW FEATURE IN GENERAL MOTORS RADIO

DAYTON—A converter which transforms a tuned radio frequency type of radio into a super-heterodyne and at the same time functions as a remote control unit, has been brought out by the General Motors Radio Corp.

The converter is built to resemble a smoking stand, with an illuminated dial set into its beveled edge and operated by a small knob just beneath it. Volume also is controllable through another small knob.

The converter is portable and connected with the receiver by means of a flexible cord 30 ft. long. It is constructed of antique brass.

It stands about 22 in. high. In its top is fitted a removable glass ash receiver. Evenly balanced, it is not easily tipped.

G. E. UNIT PURCHASED

POUGHKEEPSIE, N. Y.—The Wallace Co. has installed a model SS-82 General Electric refrigerator in Olmsted Hall.

SELECTED PROSPECT LIST SECURED IN PRIZE CONTEST

MINNEAPOLIS—Compilation of a list of selected prospects for electric refrigeration sales at the recent Northwest Radio and Electrical show was accomplished by Crane Co., dealer in Mayflower electric refrigerators.

The dealer dressed one of the office girls as Priscilla each night during the show and she passed out tickets for registration for the drawing which was held each night.

At 10 o'clock, the holder of the fifth ticket drawn would receive a 50 per cent discount on the purchase of a Mayflower.

During the show, the dealer received 2,000 names for a prospect list and in the opinion of officials of the company, the list is selective, as people who are willing to pay half of the sales price are interested in refrigeration.

If the company had offered a free unit, a list of more than 40,000 names would have been tabulated.

The booth of the Crane Co. contained three Mayflower refrigerators with a spotlight shining on the Mayflower ship atop the large model in the center.

ICE-O-MATIC DEALER OPENS CENTRAL SHOWROOMS

MIDDLETOWN, Conn.—The Red Wing Oil Heating Co., Ice-O-Matic refrigerator dealer, has opened a central showroom at 114 Main St. The meter sales plan has been introduced by the concern.

POWER CO. SELLS 127% OF YEARLY QUOTA IN 9 MONTHS

KANSAS CITY, Mo.—The Kansas City Power & Light Co., had sold 8,535 electric refrigerators, or 127.58 per cent of its quota by Oct. 1. The Missouri Public Service Co., at the same date had sold 365 units, or 121.66 per cent.

DEALER COOPERATION PROGRAM SUCCESSFUL

BROOKLYN, N. Y.—That the dealer-cooperation program inaugurated by the Brooklyn Union Gas Co. is working is evidenced by that company's announcement that dealers' net purchases of appliances for the first nine months of this year surpass those for the whole of 1930 by more than $23,000.

Dealers' purchases for the nine months ending Sept. 30, 1931, totaled $263,608. For the 12 months of 1930, dealers' purchases amounted to $239,596.

Comparing the first nine months of this year with the corresponding period of 1930, dealers' purchases show an increase of more than $100,000. The purchases for the nine months ended Sept. 30, 1930, total $158,869.

Sales through dealers' prospect leads show an even greater increase. Appliance sales resulting from dealers' leads for the first nine months of this year total $163,855, or more than $83,000 greater than for the corresponding period of 1930.

The dealers' purchases for September were the largest since the advent of dealer cooperation here, totaling $53,520. The previous high record month was October, 1930, when $36,311 worth of appliances were purchased by dealers.

More than half of the September total results from Electrolux refrigerator purchases. Of the $53,520 over $36,495 represents refrigerator purchases by dealers. This refrigeration figure alone exceeds the total dealers' purchases for any month since the advent of the cooperative movement.

DAYTON REFRIGERATOR CO. BRANCH FORMED IN EAST

BRIDGEPORT, Conn.—The Dayton Sales Co., recently formed here to handle distribution of the Dayton electric refrigerator throughout the entire New England area and part of New York state, is carrying on an active campaign to secure dealers, according to M. M. Rosen, general manager of the company.

The Dayton Refrigeration Corp., of Dayton, Ohio, is a subsidiary of the National Pumps Corp., and makes a domestic line of three models.

Warehousing for the new territory is being done in Bridgeport now, but later it is planned to establish additional warehouses in Boston and Albany. Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut will be covered by the new territory, as well as Westchester county, N. Y., Albany, Schenectady, Troy, Utica and adjacent cities.

G. E. FEATURED IN PRIZE WINNERS WINDOW DISPLAY

LINCOLN, Nebr.—The Iowa-Nebraska Light and Power Co. of this city utilized a General Electric refrigerator as a feature of its display window, which recently won first prize in the annual fall window display contest held under the auspices of the Merchants Association of Lincoln.

The window was arranged by L. A. Chapin, Jr., display manager and decorator for the utility.

In this annual event all windows throughout the business district of this city are closely curtained until 7:30 p. m., at which time curtains are raised and scores of windows flash into being.

The Iowa-Nebraska Light and Power Co. is one of the utility outlets for the Storz Electric Refrigeration Co., distributor for General Electric refrigerators in Omaha.

ELECTROLUX EXHIBITED IN CALIFORNIA FAIR

POMONA, Calif.—An Electrolux refrigerator exhibit, sponsored by the Southern Counties Gas Co., the Southern California Gas Co., and the Los Angeles Gas & Electric Corp. was part of the 1931 Los Angeles County Fair held here recently.

C. G. Spencer, Pomona district manager, had charge of the booth.

Exhibitions of the various products of the county attracted thousands, the final report indicating that 230,000 residents had attended the fair.

The Electrolux booth had a number of units connected and operating for demonstration purposes. Each day they were filled with fresh, tempting dishes which were served to visitors.

BURGWIN NAMED SUPERVISOR OF ELECTROLUX SALES

CHATTANOOGA, Tenn.—Harry P. Burgwin has been appointed supervisor of Electrolux refrigerator sales for the Chattanooga Gas Co., according to announcement made by A. J. Goss, vice president and general manager of the company. Mr. Burgwin will work under the supervision of Col. C. E. Daugherty, sales manager.

He attended the November factory school at Evansville.

Be the FIRST to Adopt this Modern Selling Plan

Speed Up Your Refrigerator Sales

Give FREE to Purchasers a

BRACH Electric KlockKoinKollector

A Sales Argument without Resistance

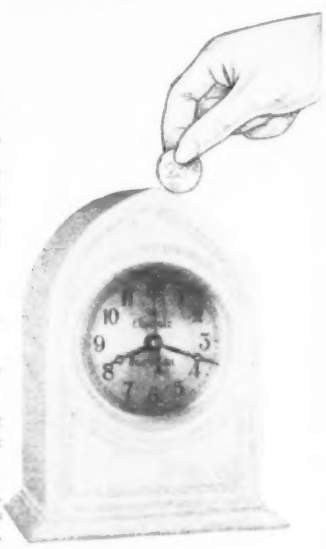
When the salesman has a refrigerator half sold and an added urge is needed to get the prospect on the dotted line, this beautiful Electric Klock Koin Kollector, offered as a gift, with the suggestion that

"A Quarter A Day Keeps the Ice Man Away"

breaks down resistance and closes the argument.

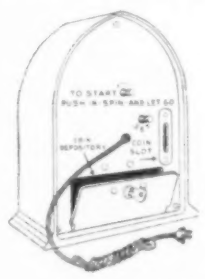
There isn't anything about this clock that indicates that it is a bank. It's just a pretty clock.

Your customer drops in the slot 25c a day. Your collector carries the key and collects monthly or weekly the payments thus made.



It's an Unbeatable Plan!

It will sell Refrigerators, Radios, Washing Machines, Pianos or other high priced articles



BRACH ELECTRIC CLOCKS

Are widely known for their superiority in accuracy and wearability. They are beautifully finished, ornamental, everlasting, and are sold in best stores.

Important Feature

Dealers or Distributors may have any *trade mark* or *slogan* desired put on face of clock—such as "Electric Ice-Man"; "Mechanical Ice-Man"; "Collectron"; or own trade mark.

Immediate Deliveries — Wire for Quantity Prices

Brach Electric Clock Corporation

55-63 Dickerson Street - - - Newark, N. J.

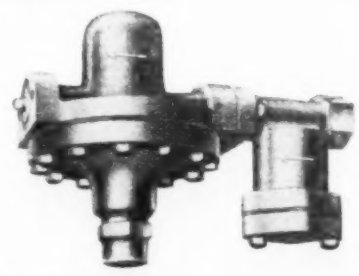
POLAR AMMONIA EXPANSION VALVE

• *Service is Expensive* •

The best refrigerating machine ever built is only as good as the expansion valve used.

Many inferior expansion valves have condemned some of the best installations. Use of POLAR PRECISION BUILT AMMONIA EXPANSION VALVE will eliminate considerable expense.

Write for further details



Atlas Copper & Brass Mfg., Co.

2734 High Street **Chicago, Ill.**

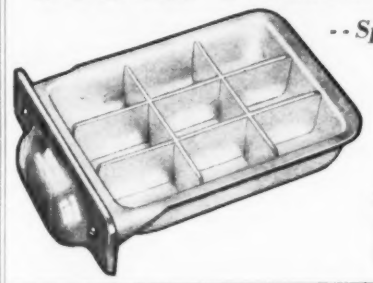
BUYER'S GUIDE

Manufacturers Specializing in Service to the Refrigeration Industry

SPECIAL ADVERTISING RATE (this column only)—$12.00 per space.
Minimum contract—13 insertions in consecutive issues.

STOCK PARTS LOWER COSTS

--Speed Up New Model Production



Hoosier Stock Parts save retooling expense, eliminate profitless small operations, stop delays. We ship *from stock* to meet your production schedules. Send us your specifications for quotation on stock or special designs.

HOOSIER

LAMP & STAMPING CO., EVANSVILLE, IND.

The Next Volume Seller

the household Electric Range . .

new ELECTROCHEF

Outstanding in value, design and performance

Some desirable territories open for the outstanding distributor

ELECTROMASTER, INC.

1803 E. Atwater St. Detroit, Mich.

Hard and Soft

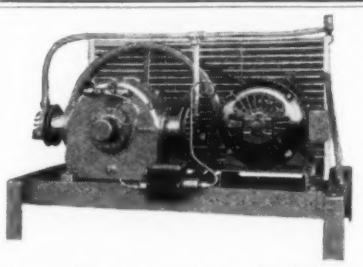
Rubber Parts for Electrical Refrigerating
Ice Cream Cabinet Parts, including

Lid Collars, Sleeves, Brine Hole Stoppers, etc.

Specializing in Rubber Parts manufactured to customer's specification

Dryden Rubber Company

1014 S. Kildare Ave. :: Chicago, Illinois



BAKER Commercial Refrigerating Units

The Profitable Answer to Every Refrigerating Need

Distributor's Inquiries Invited

Baker Ice Machine Co., Inc.

Manufacturers of Ice and Refrigerating Machinery for more than twenty-five years

A complete range of sizes for Methyl Chloride, Air or Water Cooled Condensers, Standard or Heavy Duty Types

1518 Evans St. Omaha Nebr.

· SPECIALISTS ·

Specially Dried Sitka Spruce Refrigerator Lumber

That is—

Dried to less than 9% moisture content
Strong, tough and light weight
Easily milled, nailed and screwed
Odorless and tasteless
Straight and free from warp or twist
Easily sealed, painted or lacquered
Perfect cabinet wood

C. D. JOHNSON LUMBER COMPANY

PORTLAND OREGON

Requests for Information

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

Cooling Units

Query No. 604—"Please advise makers of cooling units for small electric refrigerators for domestic use."

Answer—McCord Radiator & Mfg. Co., 2585 E. Grand Blvd., Detroit, Mich.; American Radiator Co., 5842 Trumbull Ave., Detroit, Mich.; Bush Mfg Co., 100 Wellington St., Hartford, Conn.; Fedders Mfg. Co., 57 Tonawanda St., Buffalo, N. Y.

Manufacturing Figures

Query No. 605—"Would you furnish us with figures on the number of domestic and commercial electric refrigerators sold each year?"

Answer—1921, 4,000; 1922, 11,000; 1923, 17,500; 1924, 37,500; 1925, 109,000; 1926, 259,000; 1927, 468,000; 1928, 635,000, 1929, 902,000; 1930, 1,002,000.

Ice Cream Covers

Query No. 606—"Where can we have covers for ice cream cabinets made up to fit two Frigidaire units?"

Answer — Frigidaire Corp., Dayton, Ohio., provides a repair service on ice cream cabinet lids at very reasonable cost. Dryden Rubber Co., 1014 S. Kildare Ave., Chicago.

Hydrator Dishes

Query No. 607—"What companies manufacture hydrator dishes for electric refrigerators?"

Answer — Vollrath Co., Sheboygan, Wis.; Corning Glass Works, Corning, N. Y.; Fedders Mfg. Co., 57 Tonawanda St., Buffalo, N. Y.; Federal Enamelling & Stamping Co., McKees Rocks, Pa.

Refrigeration Parts

Query No. 608—"Will you furnish us with the name of refrigeration parts supplier in Philadelphia?"

Answer—Iceless Refrigeration Accessories Co., 2401 Chestnut St., Philadelphia.

$26,000 Refrigeration Order Climaxes Harrison Presidential Drive

NEWARK, N. J.—A $26,000 refrigeration order to equip completely the Jersey City Medical Center, obtained in the final week of the nation-wide General Electric sales contest, crowned the 10-week drive of Philip H. Harrison & Co., distributors for Newark and northern New Jersey.

Harrison ended the campaign at the top of the Fred Harvey district, placed fifth in the sales quota competition, and captured fourth place among the national offices of Refrigerania.

Harrison rose from twenty-fourth place at the middle of the contest to sixteenth place in the sixth week, climbing to seventh place just prior to his successful eleventh-hour efforts.

Harrison men set several records within their own organization during the past month. Thomas E. Babson, sales promotion manager, states that sales for November, 1931, topped any preceding November.

In the 10-week drive, 150 per cent of quota was obtained, and sales for the week of Nov. 14 to 21 were higher than for any other week in the entire five-year existence of the Harrison organization. In this one week alone sales were 30 per cent higher than for the entire month of November, 1930.

The $26,000 order for the Jersey City Medical Center was the highest single order yet obtained, Harrison declares. It includes 48 refrigerators, ranging from the smallest domestic cabinet to boxes of 45-cu. ft. capacity.

Among the units were two CS-450, sixteen PS4-17, fifteen SS-82, four SS-62, one P-72, one S-140, one P-16, one S4-2, one S-180, one special water cooler and one biological cabinet.

The order also included four ice-makers for freezing sealed-up cold packs filled with a special solution which congeals to a uniform mush, eliminating sharp chunks of ice. When the packs have melted they are placed in the box and re-frozen.

"In no equivalent period of sales history have we sold as many apartment house units as during the contest," Harrison states.

WESTINGHOUSE DISTRIBUTOR OPENS IN NEW ORLEANS

NEW ORLEANS—The Electrical Refrigeration Co., Inc., recently appointed distributor for Westinghouse refrigerators, formally opened Dec. 5 in its show rooms at 338 Carondelet St.

Westinghouse refrigerators are also being shown in two New Orleans department stores, D. H. Holmes, Ltd., and Charles A. Kaufman Co., and by the New Orleans Public Service Co.

Officers of the new distributing organization are F. W. Evans, president; P. L. Bernard, vice president; J. G. Alvige, secretary-treasurer; and A. D. Brunskill, promotion manager.

C. B. Graves, Westinghouse representative from Mansfield, Ohio, was in New Orleans for several weeks making arrangements for the new distributor.

All departments have been organized, including a home service department.

Export of Refrigerators

September Shipments Reported by the Bureau of Foreign and Domestic Commerce

	Electric Household Refrigerators		Electric Commercial Refrigerators Up to 1 Ton		Parts for Electric Refrigerators
	Number	Value	Number	Value	Value
Austria	13	$ 873	9	$ 1,012	$ 1,970
Belgium	43	6,435	2	456	4,093
Denmark	69	3,768	2	256	2,337
France	351	17,515	48	6,535	24,768
Germany	44	3,081	2	367	4,415
Greece	5	467	...	...	268
Hungary	2	400	...	...	...
Iceland	2	225	...	...	...
Irish Free State	12	1,226	6	751	163
Italy	18	994	22	2,125	2,372
Malta, Gozo, and Cyprus	1	140	...	...	...
Netherlands	2	310	9	1,229	2,056
Norway	10	892	...	...	866
Poland and Danzig	...	...	...	...	43
Portugal	...	...	7	911	333
Rumania	...	...	7	698	749
Soviet Russia in Europe	...	...	...	...	64
Spain	...	...	1	600	655
Sweden	5	610	13	1,673	3,156
Switzerland	23	2,585	56	7,061	7,887
United Kingdom	176	28,176	88	7,681	14,507
Yugoslavia and Albania	51	4,944	28	3,964	12,677
Canada	477	50,385	127	12,991	53,736
Costa Rica	3	540	...	...	19
Guatemala	5	819	...	...	186
Honduras	5	595	...	...	351
Nicaragua	1	200	...	...	...
Panama	64	12,818	7	1,849	2,240
Salvador	5	1,011	...	...	...
Mexico	48	6,604	2	750	1,408
Newfoundland and Labrador	...	...	...	...	13
Bermudas	26	3,184	7	888	646
Barbados	1	236	...	...	22
Jamaica	2	489	...	...	38
Trinidad and Tobago	...	...	1	280	...
Other British West Indies	...	...	1	250	69
Cuba	498	68,139	3	825	2,052
Dominican Republic	14	1,913	1	176	99
Netherland West Indies	5	1,171	...	...	41
Haiti, Republic of	8	1,307	1	120	177
Virgin Islands of U. S.	3	829	2	544	107
Argentina	869	126,873	2	538	21,419
Brazil	82	9,678	60	6,129	8,100
Chile	24	2,398	...	...	3,005
Colombia	18	2,116	1	299	517
Ecuador	1	121	...	...	...
Peru	1	101	1	325	101
Uruguay	5	502	6	804	919
Venezuela	55	6,777	29	4,298	540
Aden	4	839	...	...	30
British India	131	15,091	4	712	3,412
British Malaya	62	7,434	...	...	905
Ceylon	6	635	...	...	65
China	2	209	2	842	151
Java and Madura	15	2,781	1	686	337
Other Netherland East Indies	...	...	...	...	34
Hong Kong	36	4,131	4	355	529
Japan	29	3,204	5	850	2,942
Kwantung	3	364	...	...	...
Philippine Islands	145	23,096	6	692	687
Siam	20	2,520	1	425	...
Syria	1	259	1	235	144
Turkey	1	340	...	...	463
Australia	...	...	...	...	1,823
British Oceania	...	...	...	...	94
French Oceania	1	277	...	...	...
New Zealand	34	3,762	3	271	895
Belgian Congo	...	...	1	230	...
British East Africa	...	...	6	1,429	983
Union of South Africa	511	74,438	27	4,379	3,322
Other British South Africa	...	...	...	...	4
Gold Coast	2	686	...	...	38
Nigeria	...	...	...	...	318
Egypt	37	3,559	...	...	1,860
Algeria and Tunisia	31	5,467	...	...	470
Madagascar	2	360	...	...	23
Other French Africa	3	360	...	...	53
Morocco	1	176	...	...	861
Mozambique	7	1,195	...	...	...
Canary Islands	1	164	...	...	...
Total	4,132	$522,794	612	$ 77,491	$201,812
Shipments to Hawaii	210	33,660	42	6,761	7,720
Shipments to Porto Rico	92	14,389	7	1,479	2,389

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE is paid in advance—Positions Wanted—fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional wards ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Building, Detroit, Mich.

POSITIONS WANTED

TEN YEARS' mechandising electrical refrigeration. Thirty-five years old. Exceptional analytical ability. Dynamic and intensive in operations. Exceptional personal sales ability, leadership and ability to attract most successful men in industry. Now district sales manager, national organization eastern territory. Could open up 10 highest class distributors next 30 days. Now available. Box 395.

POSITIONS AVAILABLE

WANTED—Commercial salesman to represent leading dealer in Tampa on electric refrigeration. If you are not a producer, don't reply. J. H. Harris, 102 E. Lafayette St., Tampa, Fla.

WANTED—Sales representatives with following among refrigerator and electrical distributors and dealers to handle a combination electric clock and coin receptacle on commission basis. Nationally advertised product. State fully qualifications and territory covered. Thriftime Devices, 205 E. 42nd St., New York City.

Distributor Wanted

Established Manufacturer of Electric Appliances has exclusive sales franchise to offer financially responsible distributor with an established organization. Product nationally advertised. 1931 sales greater than in all previous years combined. Peak season from January to July. Exclusive patented features and priced lower than competition. Immediate possibilities greatest of any appliance now on the market. Write advising lines handled and territory covered. All replies treated strictly confidential.

Box No. 398

Electric Refrigeration News

PROFESSIONAL SERVICE

Testing Laboratory
For refrigerators and refrigerating equipment
George B. Bright Co.
Refrigerating Engineers and Architects
2615 12th St., Detroit, Mich.

DELOS P. HEATH
Consulting Engineer
1001 East Jefferson Avenue
Detroit, Michigan

SUNDSTRAND DISTRIBUTORS APPOINT 21 SUB-DEALERS

ROCKFORD, Ill.—Twenty-one new dealers have been added to the list of the Sundstrand Engineering Co., oil burner manufacturer. All of them will serve as sub-dealers under Norwest Sales, Ltd., Vancouver, B. C.; Standart Bros. Hardware Corp., Detroit, and the A. Y. McDonald Mfg. Co., Minneapolis, distributors for Sundstrand in their territories.

The new dealers are W. Pridham, Victoria, B. C.; Pacific Pipe & Flue, Ltd., Penticton, B. C.; Peters the Heaters, New Westminster, B. C.; Story & Dodge Hardware Co., Rockwood, Mich.; R. E. Kraus, New Boston, Mich.; Flat Rock Hardware Co., Flat Rock, Mich.

Jager-Asmus Hardware Co., Wyandotte, Mich.; Zimmerman Bros. Hardware Co., Marine City, Mich.; Eckelmeier Bros. Plumbing & Heating Co., Detroit; Sam Andres Plumbing & Heating Co., Ann Arbor, Mich.; F. A. Riley Hardware Co., Caro, Mich.; Feobel Hardware Co., Detroit; Trums & Kirchki, Detroit; Jan Machayski Hardware Co., Detroit; Sanford Hardware Co., Milan, Mich.; Schaeffer Hardware Co., Ypsilanti, Mich.

Cloutier Electric & Hardware Co., Ecorse, Mich.; R. H. Nass Hardware Co., Lincoln Park, Mich.; Nick Visser, Long Prairie, Minn.; Wilson Electric Service Co., Hayward, Wis., and W. G. Ebert, Windom, Mich.

WESTINGHOUSE DEALER ADDS TORRIDHEAT BURNERS

ROCKVILLE CENTER, N. Y.—Cleveland Steel Products Corp., Cleveland, Ohio, announces that the Sunrise Utilities Co., Inc., here, has become a member of its dealer organization.

Besides Torridheat oil burners, the company also sells Westinghouse electric refrigerators in Nassau county.